



IS AIRPLANE SPRAYING PRACTICAL?—PAGE 13

IDENTIFYING DISEASE INJURIES—PAGE 10

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FORD MOTOR COMPANY



Vol. 65, No. 3, AMERICAN FRUIT GROWER, published monthly by American Fruit Grower Publishing Co., 1370 Ontario St., Cleveland 13, Ohio. Subscription rates: Domestic, except Cleveland, 3 years \$1.00. One year, 50 cents. Cleveland, Canada and foreign \$1.00 per year. Single copy, 10 cents. Entered as second-class matter at Post Office at Cleveland, under the Act of March 3, 1879. Additional entry at Mount Morris, Illinois. Printed in U. S. A.

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WHEN YOU HAVEN'T TIME TO BE WRONG

With less manpower this year than ever before, you haven't time for inefficiency in pest control.

You need insecticides and fungicides that have not only passed their basic training in the laboratory but have had actual combat experience in the field. Products bearing the Du Pont label are the result of scientific research combined with actual grower tests. Working

with you are Du Pont's chemists, entomologists and pathologists, in an unconditional-surrender war on insects and diseases.

Typical Du Pont pest control products that may save you valuable man-hours are: Sulforon* micro-fine wettable sulfur; Alorco** cryolite, superior fluorine insecticide; Fermate* fungicide, new and remarkable for its protective ac-

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Keep in touch with your Du Pont dealer and consult him when in doubt about your particular needs, E. I. du Pont de Nemours & Co. (Inc.), Grasselli Chemicals Department, Wilmington 98, Delaware.

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Do you need a tractor that can handle *all the work* in your orchard? And get it done on time in spite of tough soil conditions or bad weather? A tractor that can haul big sprayers, for example, up and down hills, through the mud—anytime!

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For top performance at low operating cost 365 days a year, get an Oliver "Cletrac," now built in limited quantities for essential agricultural use. They're designed specifically for the fruit farm, and available in several sizes, ranging from the versatile Model HG-68 with high clearance and 68-inch row width, to the husky Model B.

Safety and Stability on Hillsides and Turns

Unlike all other track-type tractors, the Oliver "Cletrac" does not steer by disconnecting or de-clutching the inside track on turns. Both tracks pull at the same time—*all the time*. This *Tru-Traction* principle gives you full power when it's needed most ... makes maneuvering in cramped

corners, around trees and at the headlands easier, smoother. It means safety and stability when going downhill with a full load.

Call on your Oliver "Cletrac" dealer to assist you in making application for a new tractor. He'll be glad to help. **The OLIVER Corporation**, 400 West Madison Street, Chicago 6, Illinois.

Send for This Free Booklet

Here's an interesting booklet, "365 Days," that tells how the Oliver "Cletrac" helps make farming more profitable all through the year. Use the coupon—and read this booklet before you buy any tractor.

The Oliver Corporation
400 W. Madison St., Chicago 6, Illinois
Please send me the Oliver "Cletrac" booklet,
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YOU know the story. Our country's fourth wartime spring is on the way and again there aren't going to be enough new tractors and farm machines to go around. Our hope for greatly increased farm equipment production has faded in the face of war demands.

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Equipment and all it stands for. Depend on your FARMALL TRACTOR, the first all-purpose row-crop tractor; the tractor that is first today. Depend on the quality built into MCCORMICK-DEERING FARM MACHINES.

Take the new "IH" symbol as our pledge, and the pledge of our dealers, that International Harvester will lead the way to better, easier, more profitable farming.

Uncle Sam Needs Wood for War.
Cut and Sell Your Pulpwood and Sawlogs. Consult Your County Agent.

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Full production of this equipment must wait on Victory. These are examples of many new machines that will be available in peacetime.



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WISCONSIN Heavy Duty Air-Cooled ENGINE

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Fortunately, many leading makes of essential farm and orchard equipment . . . including dusters and sprayers, garden tractors, irrigation pumps, etc., are now supplied with a "built-in hired man", in the form of a dependable Wisconsin Engine, as part of the original equipment. Never gets tired, never quits until you are ready to quit. Always ready to start and go . . . at any season, in any weather. No cooling troubles . . . because the engine is air-cooled.

**Write for Condensed
Catalog of Engine-
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Illustrates and describes a great variety of Wisconsin-powered equipment adapted to your use. Also gives names and addresses of manufacturers. Write for it. Address: Dept. AFG-2.



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World's Largest Builders of Heavy-Duty Air-Cooled Engines

LETTERS TO THE EDITOR

The Pixwell Gooseberry

Gentlemen:

In your November issue on page 6 you publish a very helpful article on "New Varieties of Small Fruits" by George M. Darrow.

In this article, Dr. Darrow mentions the Pixwell gooseberry. Can you tell me where I can get even a few plants of this Pixwell gooseberry?

I have been reading of this berry for several years but never have seen them mentioned in the nursery catalogues. Thank you for any help you can give me.

Mechanicsburg, Ohio Z. E. Rutan

The Pixwell gooseberry can be purchased from the Andrews Nursery Co., in Fari-bault, Minnesota.—Editor.

On Spraying Apricots

Gentlemen:

We have two apricot trees that are four years old. For the last two years they have been loaded with fruit, but the fruit has always fallen off when it is half grown. Can you tell us what to do for this?

We never spray these trees. They are away from our peach orchard and we never seem to think of them when we spray. Are they to be sprayed like peaches?

Newark, N. Y. Wm. B. Verschage

In so far as we know, all apricot varieties are self-fruitful, so it should not be a pollination problem which concerns your apricot trees. The trouble may be curculio which causes fruit to drop while it does not in apples. Your apricot trees should be sprayed in the same way you spray your peach trees.—Ed.

Fair Working Agreement?

Dear Sir:

Will you please advise what a fair working agreement on a share basis would be in this case?

The owner of the fruit farm furnished farm, buildings, and all equipment necessary for the operation of the farm. The renter takes full responsibility as manager. He puts in full time in labor. He lives on the farm, and the wife's work is contributed, of course, during the busy season. She also kept the books through 1944, when the gross income was \$32,000.

Both parties share all expenses, including upkeep of all machinery, buildings, land, the purchase of all spray materials, and the expense of hired labor—in fact, all expenses incurred in the year's work, on a 50-50 basis.

Would it be customary for them to also share alike the percentage of depreciation on equipment and buildings, allowed by the government when making out income tax returns?

Berrien Springs, Mich. O. A. Stanchfield

Not enough facts of the case are given for us to express our opinion on a fair working agreement between landlord and tenant on the proposition submitted. It is not stated whether this tenant has been with the landlord all the years during which the orchard has been brought into bearing, or whether he started after the landlord had the orchard brought up to bearing stage.

It would appear that regardless of these facts, it would be proper for the landlord to receive as a credit for expense, the depreciation to buildings and equipment, allowed by the government when making out income tax returns, and not the tenant.

Along these lines, you will be interested in a new circular from the College of Agriculture, University of Illinois, Urbana, Illinois, entitled, "Father-Son Farm Business Agreements." The agreements offered in this circular are also suitable for an established farmer and an unrelated young man.

We would be interested in hearing from growers who have worked out satisfactory working agreements with their tenants.—Ed.

Return to Fruit Growing

Dear Sirs:

Recently I was honorably discharged from the United States Army Air Corps. Since I have returned to farming and fruit growing, I was interested in your article in the last issue of the *American Fruit Grower* on surplus army property. I have been unable to locate the October issue to obtain the addresses of the eleven regions handling the material. Would you please send me this issue or the addresses?

Hamilton, Ohio J. R. Line

A copy of the October issue of *AMERICAN FRUIT GROWER* was sent to Mr. Line with our best wishes for success in his return to farming and to fruit growing.—Ed.

Winter Banana Apple

Dear Sirs:

Lately I found a few apples here that were good. The merchant said they were Winter Bananas. Please give me a little information on them.

Memphis, Tenn. S. W. Moore

The Winter Banana is said to have originated on the farm of David Flory near Adamsboro, Cass county, Indiana about 1876. It was introduced by Greening Brothers, Monroe, Michigan in 1890. However, U. P. Hedrick of the New York Agricultural Experiment Station in his book "Cyclopedia of Hardy Fruits" states that although the Winter Banana is said to have originated in Cass County, Indiana, he has seen the fruit brought from Holland, name unknown, which leads him to believe this to be an Old World Apple that has somehow found its way into the New World.—Ed.

Pine Shavings as Mulch

Dear Sir:

Would it be harmful to fruit trees if coarse pine shavings are used as a mulch? In a moderate degree or in between raspberry bushes?

Des Moines, Ia. Gus Feige

Shavings have not proven injurious to soil or plants. They conserve moisture and improve physical conditions of the soil. They do not supply nutrients from leachings as straw, hay, or other such litter will.—Ed.

Parasites for Control

Dear Sir:

I have read several articles about the parasite for the control of the oriental fruit moth. Could you tell me if any are available and where I could get them?

Martinsville, Ind. A. Jensen

The state experiment station usually supplies these parasites to fruit growers in their state. We suggest that you write to the Department of Entomology, Agricultural Experiment Station, La Fayette, Ind.—Ed.

A statement by du Pont about

DDT

(dichloro-diphenyl-trichlorethane)

DDT is widely known as a powerful insecticide.

When it is available for civilian use, Du Pont's already expanded facilities will manufacture DDT compositions for specific agricultural uses, suitable for spraying and dusting.

In the meantime, we will continue to meet the requirements of the armed forces.

To help speed the day when tested agricultural formulations of DDT will be available, the Du Pont Pest Control Laboratory will continue to work with the U. S. Department of Agriculture and other agricultural agencies.



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GRASSELLI CHEMICALS DEPARTMENT

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BUY YOUR SHARE OF VICTORY—BUY WAR BONDS

LOOK FOR THE DU PONT LOGO ON THE BOTTOM OF THE BOTTLE



Record breaking demands for nicotine products essential in protection of food have developed. Meanwhile a serious shortage of raw materials has occurred. In view of this we suggest that the grower conserve his nicotine supply for his most important protective sprays of the growing season.



4539

KEEP THE LEAVES WORKING!

● After the blossoms fall, the tree must "go to work" to produce the crop. Every leaf is needed. Every rootlet must find plant food. Like soil erosion, early leaf drop saps the vigor of the tree. Good soil and healthy leaves are necessary for more profitable yields.

Spray with **BLACK LEAF 40**

Black Leaf 40 is compatible with other spray materials and can be included with them cutting down on labor and expense of application.

BLACK LEAF 155

A. Black Leaf 155 programs are non-caustic, protect orchard vigor and fruit quality, without a heavy spray film. No cleaning is required at harvest.

Black Leaf 155 programs provide effective control of codling moth, also leafhopper, aphids, and leaf miners.

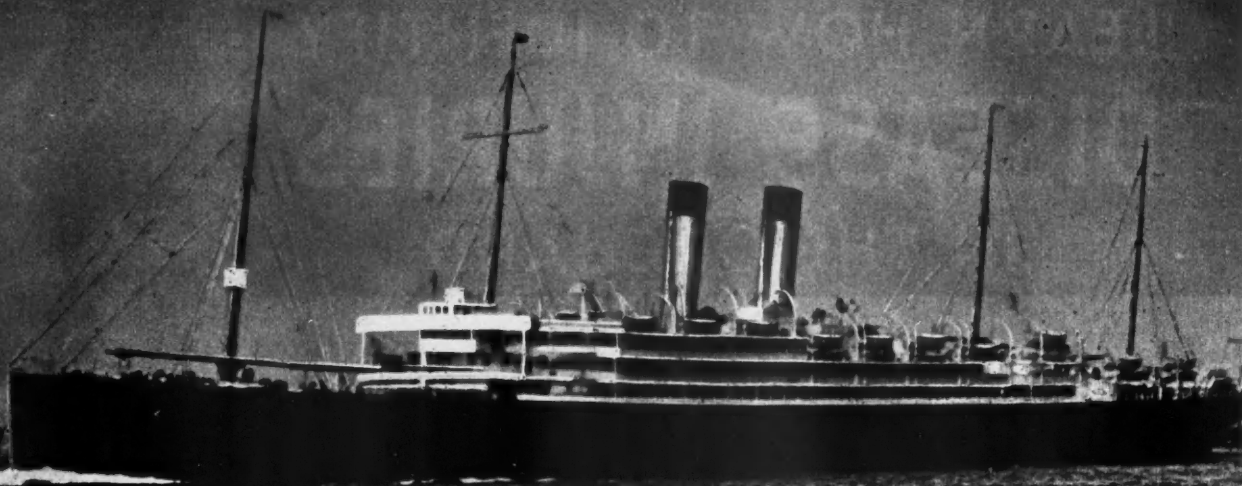
B. Get extra codling moth and leafhopper control by adding Black Leaf 40 or Black Leaf 155 to early lead arsenate sprays.

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TO PROMOTE INTERNATIONAL TRADE IN FRUITS United States Horticultural Council Organized in Chicago

TO foster the development of international trade in the fruit and vegetable industry of the nation," thus reads the declaration of purpose of the newly organized United States Horticultural Council. Big things happened during this organization meeting of the national council held in Chicago, January 29 and 30.

But first let us review the past. When we think of the American horticultural industry and its stake in world affairs, we cannot help calling to mind the name of Fred A. Motz, specialist in the Office of Foreign Agricultural Relations, U.S.D.A. It was Fred Motz, the noted international commodity specialist, who went about the country dropping the seeds that have finally germinated and are now growing into a significant part of American horticulture. From coast to coast and from Canada to Mexico, Mr. Motz has been expressing his hopefulness that some day the horticultural industries of the United States would get together, organize on a national scale and become the official body to represent fruit and vegetable interests in international affairs. Under the title of "The World Fruit Situation" Mr. Motz in the January, 1944, issue of *AMERICAN FRUIT GROWER*, expressed his personal views on the need of a national horticultural council. Further expression for the urgent need of such a council was voiced by a number of outstanding horticultural leaders of the nation in the February, 1944, issue of *AMERICAN FRUIT GROWER*. The question seemed so pressing to the industry

Fruit is first in importance among foods exported from the United States with a prewar annual value of \$87,648,000. The holds of great ships will again be loaded with fruit if plans of the United States Horticultural Council, now being formed, are carried out.—Editors.

that it was only natural that definite plans for organization should take root from those verbal acclamations.

Someone had to call the first meeting. Irving J. Woodin, a dynamic leader from the Pacific coast and chairman of the California Horticultural Export Council, assumed the responsibility and called the first organization meeting of the various horticultural interests of the nation in Chicago on January 29 and 30. Invitations to attend the meeting were extended to anyone interested in the fruit and vegetable industries. Certain government officials were requested to be present to give advice and direction. Among them were Mr. C. W. Kitchen of the War Food Administration, Washington, D. C., and, of course, Mr. Motz. It was here and under Mr. Woodin's able chairmanship that some seventy representatives of practically every regional and national horticultural organization and many large commercial concerns gathered and laid the foundations for the organization of the United States Horticultural Council. This is the official title of the organization as adopted at this meeting. It has a single purpose, as previously stated, to foster the development of international trade. It will concern itself in the future with exports and imports of fruits and veg-

etables; fresh, dried and canned. The immediate objective is to assist the horticultural industry in re-establishing its export market.

As outlined at the meeting, the more specific duties of the Council will be to encourage closer collaboration between the federal government and the horticultural industry. When peace comes, trade with foreign countries will be resumed. Undoubtedly foreign trade will at first be established on government basis, the governments of the two countries engaged in the trade actually determining what products will be sold or exchanged. It will therefore, become the responsibility of the United States government to negotiate favorable terms for the entry of American horticultural products into foreign markets. In view of this fact, the representatives of the industry deemed it necessary to organize immediately some national body that could assist both the industry and the government in re-establishing fruits and vegetables in foreign trade. The best and most logical avenue of approach to the government is through the Secretary of Agriculture. Therefore the Council members suggested that to facilitate this function, the Secretary of Agriculture designate someone from his office, capable of becoming the government advisor to the Council. Through his office the Council can make recommendations and suggestions to the appropriate government agency or agencies, and the government can in return, through this advisor, make its suggestions to the Council. The Council can then

(Continued on page 26)

LEARN HOW TO IDENTIFY DISEASE INJURIES IN THE ORCHARD

By ELDON S. BANTA

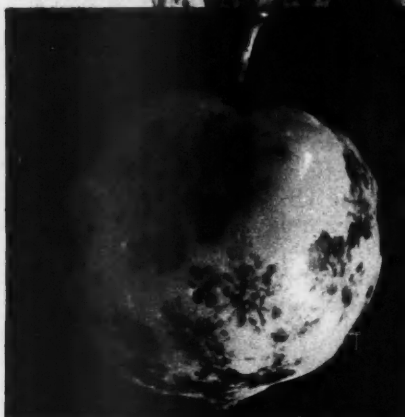
FRUITS and fruit plants are commonly injured by diseases. The total losses from disease injury in orchards frequently exceeds those of insect injuries. It is, therefore, important for the grower to be able to go into his orchard and note the first signs of a disease invasion. Identifying disease injury is not too difficult, but the grower must know where to look for a particular disease and what the injury looks like. It is the purpose of this discussion and pictorial review to present sufficient facts for the grower to accurately identify the major disease that may infect the fruit or trees of his orchard. This should be an aid to the grower in perfecting his spray program and thus effect a higher percentage of quality fruit for our consumer markets.



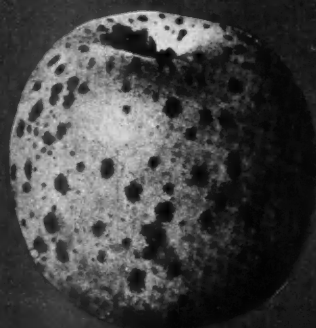
Many times the grower must use his knife to cut through the bark and wood of a branch to make a detailed examination of the disease injury. A hand lens can be used to examine the injury more closely.



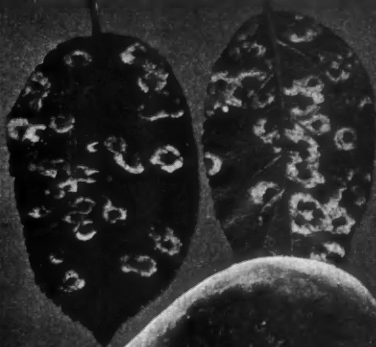
Apple Scab Injury



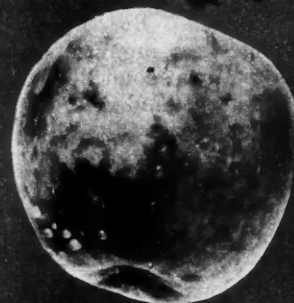
Apple Blotch Injury



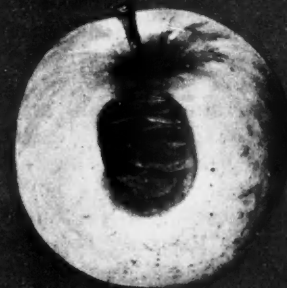
Apple's Spot Injury



Apple Cedar-Rust Injury



Apple Fire Blight Injury



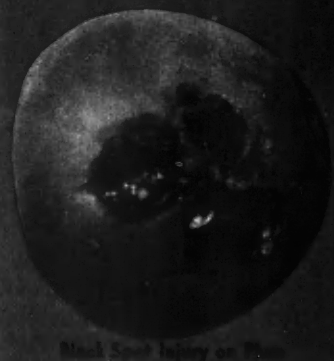
Apple Black Rot Injury



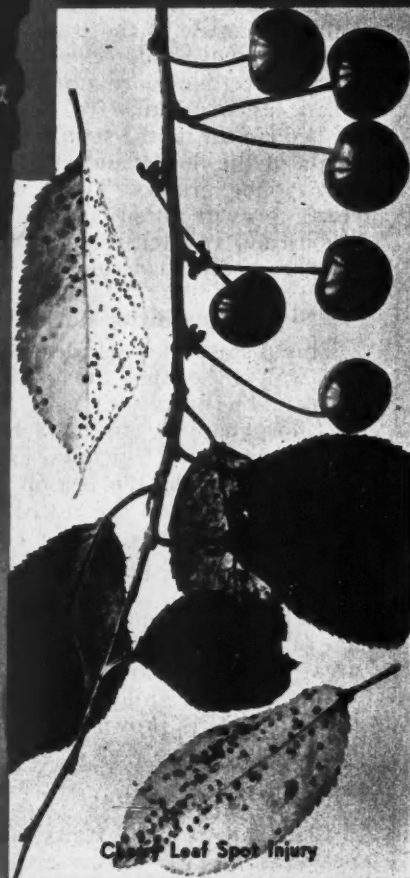
Apple Bitter Rot Injury

his knife to cut branch to show disease injury

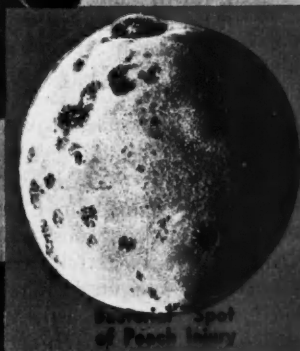
A hand lense is used to magnify or enlarge the minute nature of the injury so that the grower can be more accurate in his identification.



Black Spot Injury on Plum



Leaf Spot Injury



Black Spot of Peach Injury



Pear Scab Injury

Fire Blight Cankers on Pear Twig



Peach Scab Injury

CLOSE INSPECTION REVEALS NATURE OF THE INJURY

Many of these diseases injure more than one part of the plant. For example, apple scab blemishes the fruit, injures the leaves, and lesions of the disease are present on young twigs. Adequate descriptions of the nature of the injury on all parts of the tree will be given for those injuring more than one part to enable the grower to go into his planting and to identify a given type of injury. The descriptions given here are not fool-proof; the grower may have to cultivate the ability to see a given type of injury in order to become accurate in his identification.

Apple scab is the most common disease of the apple. It manifests itself in injuries of the leaves, fruit, flower and twigs. On the leaves it is characterized by roundish, rough, grayish black spots on the upper surface.

(Continued on page 12)



Brown Rot Injury on Peach Twig

IDENTIFYING DISEASE INJURIES

Directly beneath these spots on the under surface are other spots which are not as regular in shape as those above.

The manifestations on the fruit appear as rough, roundish, black spots very similar to those on the leaves. The spots are slightly raised. In advanced stages the fungus splits the cuticle of the fruit leaving a papery edge and exposing the black, velvetylike sporulating fungus. Small lesions similar to those described appear on the stem, calyx, or petals of the flower and also on the very young fruits. Twigs of one year's growth often show similar lesions and in later stages the bark shows a scaly character.

Apple Bitter Rot

This disease may be identified on the fruit by rotted areas of firm texture. The areas are light brown in color changing to dark brown, sunken and with a definite circular outline. Later in the season black pustules appear on the rotted areas in concentric zones. These contain spores which are pink in color, wet and sticky.

On branches from 2 to 15 years of age bitter rot appears as oval, sunken areas with the bark entirely dead within the area, while the bark below the infection is brown and appears to be dead.

Black Rot

Black rot of apple fruits first appears as a dark brown area later changing to purplish-black; the infection is often near the blossom end of the fruit. Frequently alternating light and dark bands appear in the infected area. The flesh remains firm even when entirely rotted. Black pustules develop in the older rotted areas.

"Frog-eye" is the term often applied to black rot infections of leaves. The spots on the upper surface are at first reddish-brown and from $\frac{1}{8}$ to $\frac{1}{4}$ of an inch in diameter. Later the spots have gray centers with concentric, reddish-brown circles about them.

Rather old branches are sometimes affected. The cankers are slightly sunken, reddish-brown with black dots or pustules.

Fire Blight

This is a very common and often destructive disease of both the apple and the pear. It is different from most other fruit diseases in that it is caused by a bacteria rather than

(Continued from page 11)

a fungus. It may affect the blossom, twig, branches, leaves, fruit, collar or base of tree and the roots.

Blossom and twig blight causes the infected part to turn brown from no apparent cause, wilt and die. Leaves thus infected turn brown, wilt, dry up and remain on the tree in most cases, being visible from a rather long distance when the tree is severely affected.

In branch blight, the canker is dead, sunken, brown, smooth margined with a crack, and usually with a dead blighted twig in the center. Trunk or collar blight is similar in appearance but larger in outline and effect. The blighted fruits turn brown, become somewhat softened in areas affected, and usually drops of a dirty white exudate appear on the surface of affected fruits.

Apple Blotch

The fruit, leaf and twig are affected by the disease. Infected fruits show light brown to very dark brown areas with numerous scattered black dots. The areas are irregular in outline, or fringed on the margin, often appearing fan-shaped around a common center.

The leaf spot of blotch is small, less than 2 millimeters across, angular in outline, whitish to light brown in color with 1 to 3 black dots in the middle. Twig cankers are represented by swollen or thickened areas with the bark cracked or checked and small black dots scattered over the area in brown or gray-brown patches. These are usually on branches of not more than 15 millimeters in diameter.

Apple Cedar Rust

Apple cedar rust is often a serious disease in areas where the red cedar is a native forest tree, since the fungus spends part of its life on the red cedar tree. On the apple the rust affects both the leaves and fruit. Yellow to orange spots, areas, or small blotches appear on the leaves. On the upper leaf surface the areas are filled in later stages with orange to black dots, while opposite them on the lower surface, clusters of small orange to brown cups of minute size appear. Orange to yellow areas appear on the fruit similar to those on the leaf, usually located around the calyx end of the apple. Orange to black dots or clusters of cups appear in the areas on the surface of the fruit; they may be raised or sunken.

Brook's Spot

Although this is not a major disease it often causes considerable loss to apple growers. It may be identified by the greenish brown dots or spots that appear near the base of the apple in the latter part of July (in the Middlewest). Later in the season the spots enlarge to about $\frac{1}{4}$ of an inch in diameter and more appear on the fruit.

Sooty Blotch

Sooty Blotch, a minor apple disease, may be observed on unsprayed trees in most years. Dull black, smoky or sooty spots appear on the surface with indefinite outlines.

Blister Canker

This apple disease is characterized by extensive areas on large limbs or the trunk being killed. These areas have indefinite margins. Appearing in the bark of the area are hard, flat-topped, nearly circular bodies about $\frac{1}{4}$ of an inch in diameter. They remain intact even after the bark is peeled off.

Disease Injury of the Peach

There are five diseases of the peach that may be controlled with the usual spray program. The peach virus diseases, which are not treated in this article, cannot be controlled by spraying. It is important that the grower be able to recognize the injury that each causes to the peach.

Peach Leaf Curl

This disease may be recognized by the distorted, curled, thickened leaves that are arched upward. Such leaves are usually quite reddened or paler in color than normal leaves. Defoliation often occurs in late June or July, after which new leaves are produced. Occasionally young twigs, particularly terminal twigs, are reduced in length, swollen, are pale green or yellow in color and produce only curled leaves. In severe infections, blossoms and fruits are blighted and fall from the tree.

Brown Rot

Brown rot of peach is the most common fruit disease. The tissues of infected fruits turn brown and become rather soft, the area extending deep into the fruit, often to the pit. In later stages the diseased area is covered with gray-brown tufts of the fungus growth.

This disease also affects the twig

(Continued on page 30)



Tests during the past season in applying harvest sprays from the air on pear and apple trees were made with this plane furnished by the Central Aircraft Company of Yakima, Washington.

AIRPLANE SPRAYING

Recent Tests Show Promising Possibilities

FRUIT growers have long looked to the airplane as a spraying aid, for what could be more effective than trees sprayed from the top, almost like the action of the gentle rains from above?

Some of the first experiments in airplane insect control were made with the dusting of thousands of acres of cotton, potatoes, hops, and other field crops, but for the first time, application of a liquid spray from the air was undertaken this past year.

Various tests were made with the use of harvest sprays discharged from a flying plane to prevent premature dropping of apples. Thirteen hundred acres of apple orchards in the Wenatchee and Yakima Valleys in the Pacific Northwest were sprayed in this way, and the results were highly satisfactory.

The pilots who applied the spray barely skimmed the tops of the trees, clearing the upper top branches by a few feet. The plane traveled at approximately ninety-five miles per hour and sprayed an acre in approximately twenty seconds on rows one-fourth of a mile long, not counting the time lost in turning at the ends of rows. Landing strips were provided in the sage brush or open fields near the orchard, so that the plane could be quickly filled from a supply truck and return for another flight over the orchard.

When growers first saw this revo-

lutionary method of spraying orchards, some were skeptical about its effectiveness because only one pint of liquid was applied on large trees that formerly required from twenty-five to forty gallons for complete coverage by the conventional ground method of spraying. The oil emulsion type of spray used in the airplane spraying

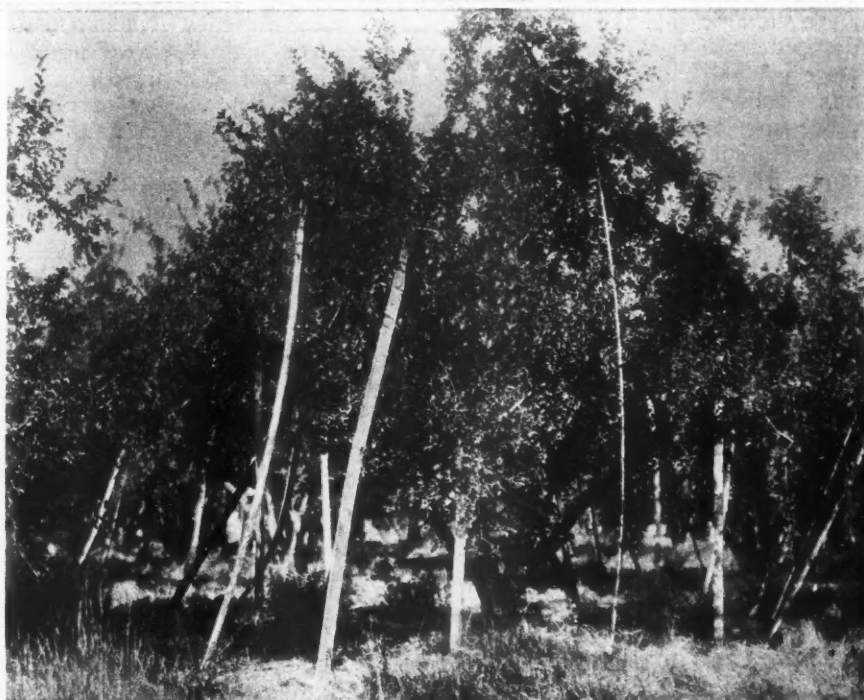
was concentrated two hundred times more than that used in the regular method of ground spraying. Each pint of liquid applied to each tree contained as much actual hormone as twenty-five gallons applied in the conventional manner.

The pint of liquid was so finely atomized that literally millions of minute droplets settled on the fruit and foliage of the trees. The 8,000 gallons of spray necessary for a ground application were replaced by 30 gallons of the highly concentrated harvest spray, which was released from a special apparatus on the airplane. The turbulence set up by the propeller of the plane caused the spray to drift down through the trees so completely that even the foliage and fruit on the lower inside of the tree received very nearly its proportion of the spray.

The airplane application of harvest sprays has quite thoroughly demonstrated that it is not necessary to wet the stems of the fruit to prevent pre-harvest drop because, in most cases, very little if any hormone actually reached the stem of the fruit. Apparently the absorption by the fruit and foliage is sufficient to do the job.

The lack of farm labor and the presence of tree props in the apple orchards of the Pacific Northwest has greatly limited the application of harvest sprays for the prevention of pre-harvest drop. When harvest sprays should be applied on apples, the harvesting of winter pears and early apples is underway in many orchards, and all available labor is tied up, preventing the application of harvest

(Continued on page 35)



In harvest spraying, the number of tree props needed in the orchard present a problem. By applying spray from the air props no longer become a barrier to thorough spray coverage.

INSECTICIDE DDT FOR FRUIT INSECT CONTROL

By B. A. PORTER

United States Department of Agriculture

Does DDT promise relief from codling moth infestations? What is its value in controlling other fruit insects? What are the difficulties that arise with the use of DDT? B. A. Porter of the Agricultural Research Administration, Bureau of Entomology and Plant Quarantine, outlines the promise DDT may have for the fruit grower, but he also warns that further research is necessary before it can be offered for general use.—EDITORS.

TWO seasons of disastrous codling moth infestations in many eastern and middle western orchards have made apple growers alert to anything that might promise relief. The preliminary results with insecticides containing DDT against the codling moth have, therefore, been of special interest to them. The major present use of this much publicized product is in connection with military operations, for the control of mosquitoes, lice, and other insects that transmit disease. Experimental work on agricultural pests has, however, been under way in the United States for two years.

The term "DDT" is used to designate an organic chemical with a most complicated name, "2, 2-bis (para-chlorophenyl)-1, 1, 1-trichloroethane." A shorter general name that includes DDT and several related compounds is "dichloro-diphenyl-trichloroethane." For convenience the material has been given the nickname "DDT," from the first letters of the three parts of the more general name. DDT does not mix readily with water, and special processing, or formulation, is necessary before it can be used in the spray tank.

Although DDT was known as a

chemical more than 70 years ago, it was only in recent years that its insecticidal qualities were recognized. A few years ago a Swiss investigator tested DDT on several insects, including the codling moth. In reporting his results he designated the material by a trade name. Late in 1942 small quantities of DDT became available in the United States, and in March, 1943, the first laboratory tests were made against the codling moth in this country. During 1944, DDT was more generally available for experimental work, and nearly every investigator of fruit pests carried on at least limited tests with it.

To illustrate the trend in much of the work against the codling moth, the results of certain of the small-plot tests carried on by L. F. Steiner, of the Bureau of Entomology and Plant Quarantine at Vincennes, Indiana, in 1944 are given in Table 1. There were three varieties of apples in the experiment, and 10 cover sprays of each insecticide were applied.

In other experiments carried on by Mr. Steiner at Vincennes, mixtures of 4 ounces of DDT per 100 gallons with reduced strengths of lead arsenate or nicotine bentonite

have also given reductions in wormy fruit far beyond those resulting from either the standard lead arsenate or the nicotine bentonite program.

In a large-scale test in a very heavily infested 8-acre block of apple trees at Vincennes, 10 cover sprays of DDT (1 pound per 100 gallons in 5 sprays and $\frac{3}{4}$ pound in the others) gave on an average, 23 worms per 100 apples as compared with 68 in adjacent blocks receiving 11 cover and 2 top-off sprays of tank-mixed nicotine bentonite, the most effective spray mixture previously available for that locality.

In other experiments insecticides containing DDT have also given outstanding control of Japanese beetles and apple and grape leafhoppers. Tests indicate that they will probably be useful in the control of the oriental fruit moth, although their value may be lessened to some extent by the killing of some of the parasites. On the other hand, DDT insecticides seem to have little or no value against the plum curculio and orchard mites. With many other insects attacking fruits, the results have been more or less favorable.

Because of the great promise offered by DDT insecticides for codling moth control, it is only natural that many apple growers, especially those who have suffered serious losses due to this insect, would like to use the material in 1945 on all or part of their acreage. A general adoption of DDT insecticides by growers, however, would be ill-advised.

Before definite conclusions can be drawn about any new material, it must be tested under a wide variety of seasonal and climatic conditions. Many new materials have shown great promise in the first year's tests, only to fall down in later seasons. Either they have failed to control the insect pest, or they have caused injury to fruit or leaves; sometimes both. In most of the codling moth tests in 1944 the weather was hot and dry. Under cold and wet conditions DDT might prove very much less effective or might cause injury.

Much work remains to be done before the possible hazard to the consumer in residues of DDT on marketed fruit will be known. Thus far, fortunately, the available information is not especially alarming.

Probably the most serious difficulty in the use of DDT in orchards will be its fatal effect on many beneficial insects, which may upset a balance that has, with many pests, been in the grower's favor. In a large proportion of the experiments in apple orchards, various species of mites have become excessively abundant in trees sprayed with DDT. In the Northwest

(Continued on page 33)

Table 1.—Comparison of DDT with standard lead arsenate and nicotine bentonite in small-plot tests of three varieties of apples against the codling moth at Vincennes, Indiana.

TREATMENT (Quantities per 100 gallons)	PERCENT WORMY APPLES ON		
	Rome	Turley	Ben Davis
Standard lead arsenate 3 to 4 lb. ($\frac{1}{2}$ percent oil in 3 sprays)	76	56	73
Tank-mixed nicotine bentonite: Nicotine sulfate $\frac{2}{3}$ to 1 pt. Mississippi bentonite 5 to 8 lb. Mineral oil 2 qt. (1 pt. in first cover)	33	23	52
DDT $\frac{1}{2}$ to $\frac{3}{4}$ lb. (mineral oil in 2 sprays)	14	—	—
DDT $\frac{2}{3}$ to 1 lb. (mineral oil in 2 sprays on Turley and Ben Davis)	18	11	9
DDT 1 to $1\frac{1}{2}$ lb. (mineral oil in 2 sprays)	2	—	—

The figures for the plot, given the regular schedule of lead arsenate, indicate the severity of the codling moth infestation during the season of 1944, which was unusually hot and dry.

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by ROBERT A.
SIMPSON

DECEMBER 7th, 1941, the Japanese attacked Pearl Harbor, killed 2700 Americans, and started our war with Japan. My son-in-law was an officer on a destroyer, and my daughter was in Honolulu during the attack. We had long days of anxiety before a cable was received, assuring us of their safety.

After this terrible attack I was eager to help our country in some active service of real importance. To do my part, to be loyal and fight for our country, I resolved to be constantly on the alert, and to put forth my best efforts to help produce and protect apples and peaches, to feed our soldiers and the world. To do this, to follow the war time methods, and to make the work more interesting, I determined to put our orchard work on a wartime basis.

I worked out the following program:

I changed the name of codling moths to "Japs."

I declared war on the Japs for the duration in the Simpson Orchard Company, Vincennes, Indiana.

I laid plans for four major battles; (1) against the carry-over of the Japs. (2-4) against three full broods of the Japs, who would most certainly appear in our orchards.

Preparation

We converted our hollow tile packing house into a concentration camp. Here we assembled all boxes, crates, ladders, baskets, and grading equipment; then we closed the doors and windows and corked any cracks to prevent the escape of the Japs. In the spring, just before time of emergence, we put black paper over doors and windows, and placed two electrocutors (lamps) in this thoroughly

blackened building.

The Japs in the building spent many long days, during their dormant period, in rest and sleep, in comfortable silk beds, waiting for "The Day" to begin their attack of destruction on the apple crop which was so near to them, and so precious to us.

The Battle

The first attack was made by a few advance guards who were overly anxious to try out their newly acquired wings, and who took the form of Jap bombing planes, propelled without gas or electricity. They were attracted by the lights, made a dive at them, and all were electrocuted. For two months, in increasing waves and squadrons, the Japs raged and swarmed, determined to win. But at last all were electrocuted and fell into the death trenches prepared for them. This battle was over, practically all were killed, and the casualties of the Japs were about 10,000. We did not lose a bomber or a man.

In killing this great number, we also destroyed the three broods that would have followed them. All of this was accomplished at surprisingly low cost. It meant a great victory that had immediate bearing on the next battles.

During the dormant season we also scraped and banded trees near the packing shed, and certain varieties of trees in the orchard, to combat the carry-over. Several thousand Japs were butchered or burned to death, and the poisoned bands killed many thousands of the 1st, 2nd, and 3rd broods.

Battle No. 2

This began when the petals fell, and lasted until September. Before starting to spray, I called a conference with our experienced sprayers and told

them I had planned a war on the Japs (codling moths) for the duration. I called upon them to volunteer, to go into this fight with me, and to fight the Japs harder, with more thorough spraying than ever before. I warned them that if we did not win the war this year, we would go broke, and they would be out of a job. I also told them that we had asked for their deferment, in order to produce and protect more food for our soldiers and the world.

They all laughed, said it was a fine idea, and all volunteered to go right into the battle, and win the war and Victory. I took my place as their captain, and promised to supervise the work, to furnish the spray schedule and the equipment—tanks, tractors, central spray outfit, portable rigs, oil, gasoline, high pressure guns, nozzles, hose; also ammunition of lead, dynamite, poison gas, nicotine, oil, lime, and bluestone. Again I impressed upon them the vital importance of thorough spraying inside-out and outside-in, with special care of the upper third of the tree.

The hour for action arrived, and all was set for the battle. When the whistle blew early in the morning, we cranked up our jeeps, loaded in our shock troops (high pressure guns and hose) and drove to our battlefield which was two hundred acres of orchard, with ten thousand apple trees, in which would soon assemble ten to twenty thousand Jap bombers for each of the three full broods during the period.

In order to have two coatings of lead in advance of the enemy's attack, orders were given to commence firing, and a heavy barrage of lead from the high pressure guns followed.
(Continued on page 36)



Professor R. M. Smock of Cornell University inspects one of the canisters, lined with brominated charcoal, which washes the air of destructive gases in the storage room and protects apples from skin burning known as the "scald" disease. Air is drawn through the canisters by means of the suction fan above. This new method may save apple growers thousands of dollars a year.

BY applying the principle of the gas mask to protecting apples in storage, apple growers of the country may save many thousands of dollars annually.

Research at the Cornell University Agricultural Experiment Station, Ithaca, New York, starting from an accidental discovery, has developed a method of controlling gases given off by the apples themselves. It employs the use of activated charcoal, plus bromine, to absorb the gases or volatile materials. This activated charcoal is similar to that used in a soldier's gas mask.

In an untreated atmosphere, the stored apples develop a "scald" disease, or a burning of the fruit skin. The fruits become unsightly and have little market value. Some varieties are more susceptible than others, among them Rhode Island Greening, Cortland, Baldwin, Rome Beauty, and Northwestern Greening.

Prevention of the disease is basically an air conditioning process. A number of canisters, with sieve-like sides, and lined with the brominated charcoal, are placed in a box in the apple storage chamber. Storage room air is drawn through the canisters by a suction fan, and the gas (or gases) that

cause scald are absorbed. One canister is enough for about 250 bushels of apples.

Impressed by the possibilities of this work when first started, the Refrigeration Research Foundation granted funds for study in ten large-scale tests in various cold storages around New York State. Results of these tests should indicate whether the new method has commercial possibilities, according to Prof. R. M. Smock and Dr. F. W. Southwick, of Cornell's pomology department, who have conducted the research.

Results at the end of the second year in the Ithaca test were announced recently. In the "scald conditioned" room, the disease was of a minor nature and wouldn't have been observed by the housewife. In ordinary storage the amount of scald ranged from nearly 37 percent to almost 90 percent.

About 25 years ago the U. S. Department of Agriculture found that the disease was caused by accumulations of certain gases, as yet unidentified, around the apples. For many years oiled paper was recommended as a control, either as a wrap or as shreds of paper mixed with the fruit to absorb the gases.

A NEW CONTROL METHOD AGAINST STORAGE SCALD

Because growers were dissatisfied with this method, Cornell started work on the disease four years ago. One of the first discoveries was that one lot of apples might induce or increase the scald on another variety. Rhode Island Greenings, for example, developed twice as much scald when stored with McIntosh than when stored alone.

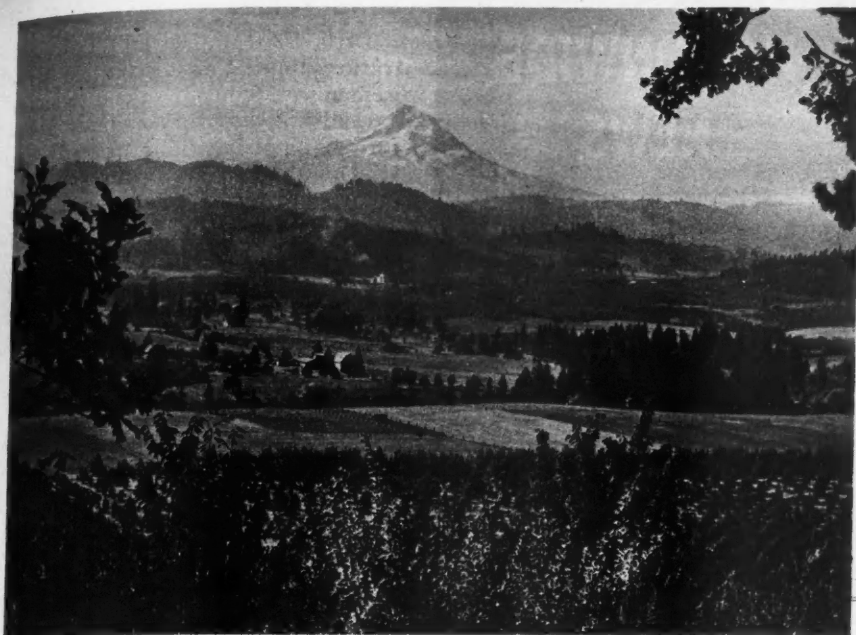
A second finding was that air conditioning could reduce if not control the disease. About this time one of those purely accidental discoveries was made. One of Professor Smock's students was working on the elimination of ethylene gas which is given off when apples ripen. He tried activated charcoal, fixed with bromine, since it was commonly known that bromine eliminates ethylene, but is difficult to handle alone because it is poisonous.

Professor Smock was struck by the idea and decided to try it in controlling the unknown scald gases. Preliminary results seemed so promising that the cold storage industry offered to subsidize the studies, and now, after two years, the results appear to justify the hope that a new method of controlling a disease that damages apples in storage all over the world will be achieved, the scientist stated.

Most scald in the Ithaca test this year developed in a non-conditioned room where Greenings were stored with McIntosh. The Greenings in an air conditioned atmosphere developed the least amount of the trouble.

One reason why the gases given off by the apples have never been identified is that only one cubic foot can be obtained from approximately 100,000,000 cubic feet of air in a storage room, Smock said. "Small though the amount is, the damage is tremendous."

Another problem still to be solved is the exact number of canisters needed to protect 1000 bushels of apples.



Left—Pear orchard scene in Hood River Valley of the State of Oregon.

to sale. The technical phases of this pre-ripening or "conditioning" program were developed by Prof. Henry Hartman, Head of the Department of Horticulture, Oregon State College, who, with Bureau executives, had conducted extensive market surveys and repeated ripening experiments both in market and producing areas.

Shipper-members sign a "conditioning" agreement, informing their brokers and receivers accordingly and requesting that their fruit be pre-ripened on market arrival if such action is warranted. A Bureau field representative in the market is the deciding factor when cars reach destination.

In important auction markets such as New York, Philadelphia, Boston and Chicago, "conditioning" rooms

WINTER PEARS GAIN NATIONAL ACCEPTANCE

By J. M. EARLEY

PRODUCTION of western-grown fall and winter pears, Bosc, Anjou, Comice, Nelis and the miscellaneous varieties, had surpassed demand by 1930. Many producers were facing disaster. Then, in 1931, a group of Northwestern pear factors organized the Oregon-Washington Pear Bureau in an effort to improve the situation. Later, California late-pear interests joined the movement and the organization became the Oregon-Washington-California Pear Bureau.

Membership in the Bureau, requiring the payment of a small assessment on every packed box, is restricted to those firms and cooperative organizations which maintain their own cold storage facilities, exercise control of their fruit from tree to car and whose label is used only on fruit packed under their own supervision. Packers, shippers and handlers sign with the Bureau, thereby becoming responsible for payment of the per box assessment and collection of same from the growers whom they serve.

The designated aims and purposes of the Bureau, itself a non-marketing organization, are "to improve the quality pack of its members; to widen the outlet for fall and winter pears grown in the States of Oregon, Washington and California; to increase good-will between the United States and those countries interested in promoting friendly trade relations; and to disseminate accurate information about the proper care and handling of



Here are Mexicans harvesting pears in the E. A. Bannister Orchard at Yakima, Washington.

fruits for the benefit of overseas and domestic buyers."

"A Seal of Quality," in the design of a ribboned medallion, is the Bureau's insignie. All fruit bearing the Seal must meet basic grading specifications as decreed for this mark of quality. Members may, of course, further distinguish their own private brands as desired.

The first four years of Bureau activity were devoted chiefly to research. In 1935 it was concluded that the much-needed stimulus to distribution could be achieved by pre-ripening of the pears in the terminal markets prior

are provided for the general pear trade by The Bureau with the cooperation of the railroads. In New York the fruit is put through specially equipped "conditioning" barges anchored in the shadow of the big terminal piers. When large wholesalers or retailers with adequate facilities wish to do their own pre-ripening, the "conditioning" technique is imparted by a Bureau field technician, after which regular visits are made to assure its proper continuance.

As the fruit is unloaded from the car, the core temperature of a representative sample is taken.

(Continued on page 38)

Lemon-Lime Production High

PRODUCTION OF lemons in California this season of 13.3 million boxes, is about 21 percent larger than the near-average production of 11.0 million boxes in 1943-44. The Florida lime crop of 250,000 boxes constitutes a new record, surpassing the previous record large crop in 1943-44 by 60,000 boxes. The 10-year average production is 75,000 boxes. Marketing of the 1944-45 crop of limes began in April, 1944, and of lemons in November, 1944. Lemons are expected to be in good supply for the rest of the current season.

Record Storage Holdings

AT THE FIRST of this year, apples equivalent to 32,649,000 bushels were in cold storage. This quantity sets a record high for this date, and is more than 20 percent greater than average January 1 holdings for the 5 years, 1940-44. Of the apple holdings on the first of the year, there were 12,852,000 bushels or 39.4 percent held in Washington, Oregon and California. A year earlier these States held 51.3 percent of the apples in storage.

Fresh Pear Prices Low

THE SEASON average price received by farmers for 1944 crop pears for all purposes, at \$2.15 per bushel, is about 9 percent lower than the record season return of \$2.36 per bushel received for the 1943 crop, but higher than for any other year in the past quarter of a century. Fresh pears sold for table use were put under price control for the first time July 25, 1944, at levels below prices realized in the previous season.

Good Juice in Small Oranges

U. S. DEPARTMENT of Agriculture studies show that on a quality basis, the juice from small oranges averages better in flavor or taste than that from larger oranges. The juice is also richer and sweeter, has more solids, and the vitamin C value of the juice average higher than from the larger fruit. This is the result reported by J. R. Winston of the Bureau of Plant Industry, Soils, and Agricultural Engineering from samplings of oranges ready to go to markets at all parts of the marketing season. It confirms several earlier studies of orange quality by other scientists.

Apples Set Aside by WFA

THE WAR FOOD Administration has issued a War Food Order

NATIONWIDE NEWS

which requires handlers of fresh apples grown and located in Washington and Oregon to set aside their holdings of Winesap, Newtown, and Delicious (except Golden Delicious) varieties to meet military and war service requirements.

Under the order all apples sold to Government agencies must be graded and packed in an acceptable manner. It is intended that the order will be so administered as to obtain the required volume from shippers on an equitable basis. Quantities not needed to fill war requirements will be released into civilian trade channels. Lots of five bushels or less are exempt from provisions of this order.

Frozen Fruit Production

COMMERCIAL production of frozen fruit in 1944 aggregated approximately 240 million pounds or about 9 percent more than in 1943. Civilian per capita consumption in 1944 amounted to about 1.5 pounds, compared with 1.4 pounds in 1943 and 0.5 pounds in 1935, since which time production and consumption have expanded rapidly. In recent years civilian per capita consumption of commercially frozen fruits has been from 10 to 15 percent as large as that of commercially canned fruits.

Food Consumption Levels

DESPITE THE expansion of military food needs and large shipments to the Allies, United States and Canadian food supplies for civilians in 1944, in most cases, were, as the result of greatly increased production, maintained or increased as compared with 1943. Food supplies for civilians in the United Kingdom also showed some improvement over 1943, but continued below the United Kingdom pre-war level for many foods and below 1944 levels in the United States and Canada for dairy products, meat, eggs, sugars, and fruit. In the U.S. and Canada there has been an increase in fresh fruit supplies.

These findings are brought out in the second report made by the Combined Food Board on food consumption levels in the three countries. These reports provide the Combined Food Board with complete and comparable data on the food supplies of its three member countries.

Land Values

THE FARM CREDIT Administration appeals to discharged servicemen to consult their country agricultural advisory committee before buying farms or orchards. I. W. Duggan, Governor of the F.C.A., reports instances where servicemen have been grossly overcharged in recent land purchases and, he says, the primary reason for setting up agricultural advisory committees in each county is to help the returning veteran to avoid this.

So far in the present war the percentage of rise in land prices is about equal to the comparative period of the last war.

The AMERICAN FRUIT GROWER will be glad to send to any serviceman a copy of its new booklet, "Successful Orchards." Servicemen will find this material helpful in choosing their orchard sites.

Grapefruit Ad Program

IN THE WEST, advertising of Arizona-California Desert grapefruit has begun on a vast scale, according to the local offices of the Arizona Grapefruit Program Committee and the California Desert Grapefruit Industry Board at Phoenix, Arizona. Advertising of a food product of farmers of two states is believed to be unique. Last summer growers of Desert grapefruit in Arizona and California voted to assess themselves for the program which will raise more than \$200,000 for advertising this season alone.

Newspapers in larger cities in the West are carrying advertisements; full color outdoor posters have been lithographed, and are ready for posting in 37 cities, covering eight states and Vancouver, B.C.; and attractive, full-color display material for use in grocery stores is being distributed. These are only a few of the media being used in this large scale advertising program.

Honeybee Paralysis

ACCORDING TO reports from the Bureau of Entomology and Plant Quarantine, U.S.D.A., at least one type of paralysis of honeybees is caused by a filterable virus disease, and the hairless symptoms, commonly depended on for diagnosis of paralysis by bee growers, are not the best signs of this sickness in bees.

Often a heavy death rate results as the disease may affect whole colonies.

Paralysis symptoms are trembling and sprawled legs and wings. These symptoms appear more frequently than do partial hairlessness or black shiny appearance on the bees.

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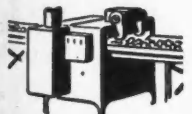
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STATE NEWS

MASSACHUSETTS—A series of county meetings for the purpose of discussing the 1945 Apple Spray Program have been arranged in most of the apple producing counties in Massachusetts. The discussion will include changes in our recommendations, present status of the newer materials, and an evaluation of the various factors involved in pest control.

According to present indications, more oil will be applied in Massachusetts' orchards this spring than in many years past according to W. H. Thies, Extension Pomologist. The present infestation in some orchards is the heaviest in the past 20 years. Reasons for this situation seem to be: (1) failure to apply oil sprays in the past two years; (2) discontinuance of the use of lime sulfur sprays; (3) weather conditions in 1944 which were favorable for scale development.—Lawrence Southwick, *Mass. State College*.

OHIO—At the request of the Office of Defense Transportation the 78th Annual Meeting of the Ohio State Horticultural Society, scheduled for the Netherland Plaza Hotel, Cincinnati, February 7 and 8, was cancelled.

The usual annual Business Meeting of the Society was held in the Horticulture Building at Ohio State University on January 30, which was the first day of a three-day Farmers' Week scheduled at the University, and a convenient time for growers over the state to get together for this business meeting.

The Society is planning to proceed immediately with the publication of their 1945 Yearbook, which will carry the talks which would have been given at the Cincinnati meeting. This will create unusual interest in the Yearbook, since only members receive this publication, and it is hoped that membership may be increased.—Frank H. Beach, *Sec'y, Columbus*.

NEW HAMPSHIRE—Several of the state's fruit growers met with the Executive Committee of the New Hampshire Horticultural Society recently at Concord to study their needs for harvest help for 1945 in order to place their needs before the Extension Service.

It was the opinion of the group that outside help must be imported and they preferred Jamaicans to War Prisoners. German War Prisoners were used in part of Hillsboro County last year and, while they did good work, they did so little in comparison with Jamaicans that the costs ran quite high because of transportation.

It was estimated that 100 Jamaicans could be used throughout the summer and later, in the fall harvest, an additional 450 could be used. Those who used War Prisoners would prefer 150 Jamaicans and others asked for 300 for fall harvest of apples, potatoes and truck crops.

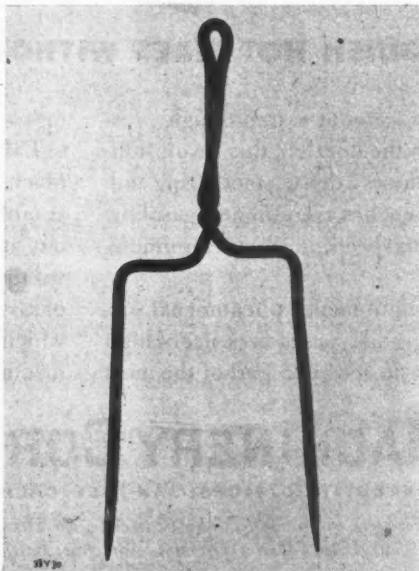
Growers appealed to State Farm Labor Supervisor, Kenneth Barraclough, to start the ball rolling to procure this help and urged that provision be made, if possible, to house some of them nearer the Londonderry, Hollis, and Wilton areas.—Alfred L. French, *Sec'y, Concord*.

WASHINGTON—The Washington State Horticultural Association, at its fortieth annual meeting, initiated the formation of a research foundation. The objectives of this foundation are two-fold. One of the important objectives is to advise with research agencies in planning needed research. It is the feeling of the horticultural leaders of the state of Washington that a committee representing all phases of the industry should be of valuable assistance to Experiment Station workers in planning research work. The second important function of the foundation is to establish a capital fund, the interest of which can be used to finance research studies.

A committee of ten members has been appointed to this Research Foundation Board. The feeling of the entire Association at the present time is very optimistic concerning its possibilities.

Interest in pruning work has been greater than we have seen it in the last 10 years. Attendance at pruning demonstrations ranges up to over 100. The demonstrations include grapes and tree fruits in particular.

Pruning work has been going along very nicely in this state. As soon as the trees were dormant, growers started immediately to prune and good progress has been made up-to-date. So far the weather has been open and, if it continues, pruning will be taken care of in good shape.—John C. Snyder, *Sec'y, Pullman*.



This "Berry Fork" is often used by Minnesota raspberry growers to assist them in laying down the canes in preparation for winter covering. Forks are used to pin down the canes in one row. The soil is then plowed over the canes and the forks are removed and used for the same operation in the next row. The fork usually is made of $\frac{3}{8}$ inch iron rod, with prongs about 6 inches apart and an overall length of 17 to 18 inches. The prongs are about 10 inches long.—J. D. Winter, *Sec'y, Mound*.

ILLINOIS—The 89th annual meeting of the Illinois State Horticultural Society was held at the Urbana-Lincoln Hotel, Urbana, Illinois. While attendance was light because of snow and ice, the program and interest was exceptionally good with such out-of-state speakers as Dr. R. H. Roberts, University of Wisconsin, Dr. L. F. Steiner, U.S.D.A., Vincennes, Indiana, Dr. J. H. Gourley, Ohio University, Monroe McCown, Washington, D.C., and university men from Illinois.

Grower discussions on most of the topics were very interesting. All the old officers were re-elected.

The 73rd annual meeting of the Horticultural Society of Central Illinois was held at Quincy, with another blizzard on the opening day. Grower attendance was fair and again the grower discussions were the highlights of the program. Most growers were optimistic about prospect for a crop the coming year but very pessimistic about the labor and supply situation. W. T. Weir, Gladstone, Illinois, was the newly elected president and E. A. House, Seymour Orchards, Payson, Illinois, was elected vice-president. Raymond Leeper was again elected secretary-treasurer.

The 71st annual meeting of the Horticultural Society of Southern Illinois was held at Carbondale. Weather was exceptionally good. Dr. V. R. Gardner of Michigan State College gave a very interesting talk on spray thinning of apple blossoms, and Dr. F. S. Howlett, Ohio Experiment Station, gave an interesting paper on pollination. Most of the horticultural staff of the University of Illinois was present and gave interesting talks. All in all it was one of the best meetings in years in southern Illinois.

The 77th annual meeting of the Horticultural Society of Northern Illinois was held at Moline. The weather was exceptionally nice and they had the best attendance they have had in ten years. A testimonial dinner was given Dr. Dwight Powell. Dr. Powell has left the University for private business.—C. C. Mast, *Sec'y, Quincy*.

MONTANA—At the annual meeting of the Directors and Stockholders of the Flathead Lake Cherry Growers' Association held at Kalispell, Montana, C. C. Fansler and B. J. Krogstad were elected directors for ensuing terms. Other members of the Board are O. A. Moen, Chairman, H. E. Robbin, Vice-Chairman, and W. M. Wayman, Secretary, all of Bigfork, Montana. Oliver Engebretson of Kalispell, Montana, was re-elected Treasurer.

The Secretary's report shows that the Flathead Lake Cherry Grower's Association now has a membership of ninety-one growers holding 199 shares of stock. During the season of 1944 the Association handled 730,241 pounds of sweet cherries. These were packed and shipped at the Association warehouse on the Great Northern Railway right-of-way at Kalispell, Montana.

Growth of the sweet cherry industry in this region is indicated by the fact that the volume handled was seven times greater than in any previous year. With continued favorable weather conditions it is now estimated that the warehouse will handle in excess of one million pounds next year.—Mildred Kelso, *Bigfork*.

TENNESSEE—The annual convention of the State Horticultural Society was a success from start to finish. We had a total attendance of 110 and most of the members attended the annual dinner.

Officers elected at this meeting were: President, Paul B. Conley, Alamo; Vice-

(Continued on page 43)

CAN AGRICULTURE HOLD ITS GAINS?

Today, farmers are soldiers of the Home Front charged with the responsibility of producing greater quantities of food than ever before, despite shortages of manpower, supplies and equipment.

Tomorrow, when peace comes, you will be "demobilized". To a degree, like other demobilized soldiers, you will have to adjust yourself to a peacetime economy. You will become once again a businessman whose success or failure will be determined by your ability to find and build markets.

Agricultural leaders are giving much thought to the questions of how successfully agriculture will bridge the gap from war to peace.

Will you producers be able to hold war-expanded markets?

Will you be able to find new markets for the increased production likely to come with the return of adequate labor, equipment and supplies?

You are not alone in seeking answers to these questions, for the same problems concern the entire food industry—processors and distributors of food as well as producers.

We, too, know that the day will come for us, as it will for you, when instead of markets seeking food, we will have food seeking markets.

How are we going to solve this common problem? How are we going to build sound, stable markets for farm produce?

We don't pretend to know all the answers. But 85 years' experience in food distribution, through good times and bad, has taught us that you and we must apply certain fundamental business principles proven sound by all successful businessmen.

This means that despite recognized wartime limitations we must constantly strive to:

Give the consumer preferred varieties.

Give the consumer garden-fresh quality food in the grade and pack that best serves her needs.

Give the consumer full food value for her dollar by eliminating unnecessary and wasteful handling operations and costs.

Because of the tremendous problem with which we are confronted, we cannot confine our efforts to the mere application of these business principles. It is heartening to note the general recognition in all branches of the food industry that we must also

plan and experiment *now* in order to find and develop new and better ways to serve the consumer tomorrow.

Working with the U. S. Department of Agriculture, Land Grant Colleges, the State Departments of Agriculture and the Agricultural Extension Service in the various states, A&P and other progressive distributors and growers are preparing now for the peacetime years through such exploratory activities as:

Surveys of production areas and methods to insure high-quality production of the varieties most in demand,

Studies to determine the most efficient and economical means of moving farm produce to market,

Experiments in pre-packaging of farm produce,

Development of better transportation methods by truck and train and plane,

Merchandising tests of tree and vine-ripened products,

Finding new by-product uses for inferior grades,

Testing of new methods of displaying and advertising and selling produce.

These are only a few of the many ways in which groups in the food industry are working together to do a better job of feeding the American public, with the thought that "he who serves best, profits most."

Today, agriculture is enjoying a wartime boom. Markets are expanded, farm income is up.

But the same thing happened in the last war and the prosperity did not endure. It was followed by a collapse of farm prices so disastrous that 453,000 farmers lost their farms through mortgage foreclosures between 1922 and 1926.

WE MUST NOT LET THIS HAPPEN AGAIN!

Obviously we cannot foresee the national economic developments that can greatly affect the future of all of us in the food industry—growers and distributors alike.

But it is crystal-clear that close cooperation between producers and distributors can mean more and better food for the American public; can make a tremendous contribution to a better future for American agriculture.

ATLANTIC COMMISSION COMPANY, INC.

Affiliate of

THE GREAT ATLANTIC & PACIFIC TEA COMPANY

★ *Uncle Sam Needs Your Timber—Cut and Haul Now While Prices Are Up!* ★

DEAN OF HORTICULTURE
LIBERTY HYDE BAILEY
Addresses
NINETY-YEAR OLD
NEW YORK SOCIETY

AMERICAN FRUIT GROWER PHOTOGRAPHS



Eighty-seven year old Liberty Hyde Bailey addresses the 90th Anniversary Banquet of the New York Society. (Left to right) C. S. Wilson, Dr. Bailey, Dr. E. C. Auchter, Administrator, Agricultural Research Administration, Washington, D. C.



Dr. Liberty Hyde Bailey talks with some of his former students. (Left to right) Bruce P. Jones, Hall, N.Y.; C. S. Wilson, Hall, N.Y.; Dr. Bailey, Ithaca, N.Y.; Dr. E. C. Auchter, Washington, D.C.; George H. Miller, Albion, N.Y.; N. R. Peete, Webster, New York.



Discussing new varieties are (left to right) J. G. Case, Sodus, N.Y.; Dr. Richard Wellington, Geneva Experiment Station, N.Y.; George A. Morse, Williamson, New York.



John Chandler, President of the N.A.I. addresses the N.Y. meeting on the "Complications and Benefits of a National Apple Program."



Top—New York berry growers talk with Dr. G. L. Slate. (Left to right) W. C. Henderson, Dr. Slate, W. E. Benning and Joseph Kujawa. Below—M. E. Buckman, Sodus, outgoing President of the New York Society, welcomes 1945 President, John A. Hall, Lockport. Roy P. McPherson, LeRoy, New York (right) continues as Secretary-Treasurer.



Carroll R. Miller, Secretary-Manager of the Appalachian Apple Service, elaborates upon the "Government and the Grower Today."

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Page 23

OUTSTANDING MEETING HAS NOTED SPEAKERS

THE annual banquet of the New York State Horticultural Society on January 11 was a unique occasion. The Society was celebrating its 90th year of existence along with the 87th year in the life of the Dean of American Horticulture, Liberty Hyde Bailey.

Dr. Bailey came to Cornell University in 1888 as horticulturist. In 1903 he was elected director of the College of Agriculture and Agricultural Experiment Station and served in this capacity until 1913, when he retired to spend his entire energies in writing.

Sixty-five books have been written by Dr. Bailey, and he has edited over a hundred others. In addition to this vast amount of editorial work, he has traveled to many remote corners of the world in search of rare plant specimens and to study the various components of nature.

During the course of his address, Dr. Bailey related his early childhood experiences in fruit growing. For their first orchard in Michigan, he and his father cleared the land among roving tribes of Indians. They purchased seedling trees, set them, and top-grafted each to a different variety. At one time he boasted of exhibiting 350 varieties from his own orchard.

Of exceptional interest were his reminiscences of travels in China, Korea, the Island of Trinidad, Mexico and other places. These trips were always fruitful in bringing him in contact with rare specimens, many of which he was the first to identify and name. The fruits of his travels have swelled the number of specimens in his gardens to over 200,000.

In 1945, Dr. Bailey expects to complete and publish a monograph on the genus *Rubus*, which covers all the bramble fruits. His masterpiece will come when he publishes a treatise on the palms of the world.

With great enthusiasm and a twinkle in his eye, Dr. Bailey referred to his work with the palms. Ten years will be required to complete the assembling and publishing of this treatise. He acknowledged that he may never get the work completed, but to use his own words, "I still have some energy left and what shall I do with it?"

Meeting Notes

The question box period has become a popular and valuable part of the New York meeting. Here growers have the opportunity to discuss

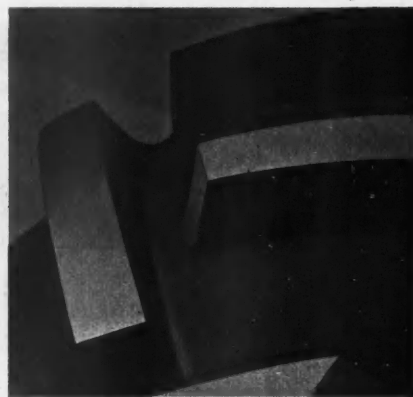
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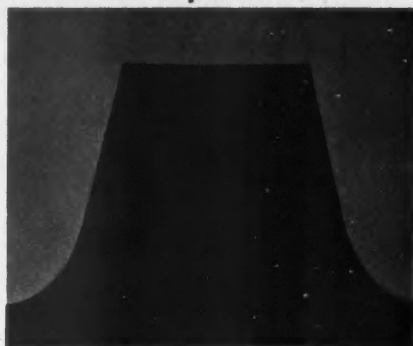
1. In pairs ...



4. Full Traction ...



2. No pockets ...



3. Can't tear loose ...



5. Free ...

Free book for tractor owners tells about tire traction

HERE'S a new book crammed with useful information for every tractor owner. It contains 68 pages of pictures and facts on such subjects as care of farm machinery, use of liquid weights in tractor tires, getting more power out of wartime gasoline, etc.

It explains how B. F. Goodrich studied the farmers' problems, trying out hundreds of different tire tread designs to learn more about traction.

How Cleats Work

The B. F. Goodrich tire has an open center—no mud-catching pockets. The tread is self-cleaning. Because of this open design, the tire tread is flexible. It gives as it rolls. Mud drops out. Cleats, in pairs, give a continuous, overlapping grip on the soil. You get continuous traction, a steady pull. Work is done faster.

Height of the cleats is determined to the hundredth of an inch. If cleats are too high they are apt to bend, reduce traction. They may chip, break off, or wear down quickly. Low cleats provide less traction. And each cleat in a BFG tire is shaped like a pyramid, reinforced at the base so it won't tear loose.

With B. F. Goodrich tires you get extra traction—added bite, grip, and pull to handle the hardest jobs. And you get long life, too. For any tractor or implement tire need, see the B. F. Goodrich man next time you are in town.

Write for the Farmer's Handbook

Some of the other subjects included in the Handbook are: farm measures and reckoning; winter care of tractors; handyman hints; how to use concrete on the farm; principles of farm drainage; the miracle of synthetic rubber; knots and splices; driving tips; tire buyers' guide; facts on silos and silage; painting methods; plumbing repairs; costs of rubber tires; and much other useful, money-saving information.

Write your name and address on a postcard, or in the margin below, tear off and send to Dept. 169, The B. F. Goodrich Co., Akron, Ohio.

B. F. Goodrich
FIRST IN RUBBER

HEAVY SNOWS BRING WIDESPREAD RABBIT DAMAGE

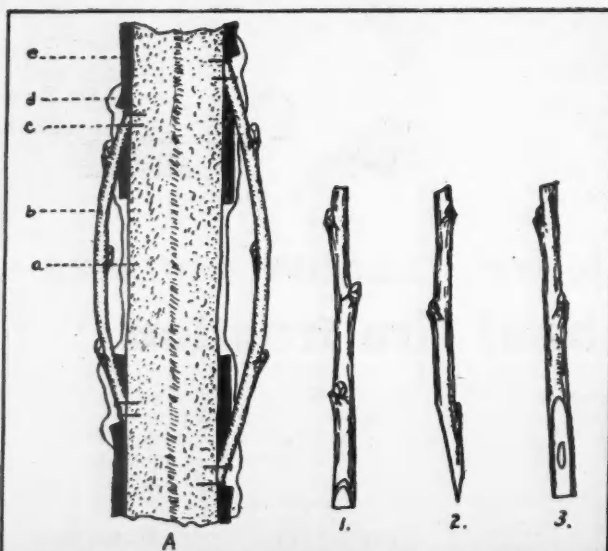
MOST fruit growing localities, especially those of the New England, Northern, and Central States, have experienced during the past season some of the most severe snowstorms in many decades. These heavy snowfalls have brought with them such an increase in rabbit injury that the loss of many bearing trees is threatened. Now the grower must repair the damage done to his trees, not only by rabbits, but by mice, and other bark peeling or eating animals.

The bridge graft, which is used entirely for repairing injured trees and not for propagation, might be called a phase of bark grafting, differing mainly in the fact that both upper and lower ends of the cion are grafted into the stock or tree. This type of grafting may also be used to advantage in bridging over damaged areas of the trunk caused by winter injury, blight cankers, disease, or

serious mechanical injury.

The principle of bridge grafting is simply a bridging over of the girdled space by means of cions that are inserted at both the top and the bottom, and which will, when united with the stock, transport food materials across the girdled area and keep the tree alive. The damaged bark should be cut back to clean, live, healthy bark in preparing the tree for bridge grafting. The cion wood is selected of sufficient length to reach entirely across the girdled area. Be sure to allow extra length, so that there will be a bow or spring in the cion when it is finally set. Cut the base of the cion clear across with a beveled cut about an inch and a half long. When this cut is made, measure the cion against the girdled area to find its proper length and then cut the upper part with a beveled cut similar to that on the bot-

(Continued on page 34)



(A) Longitudinal section showing details of a bridge graft. (a) Wound, (b) cion, (c) small nail or brad, (d) wax, (e) bark. (1) Base of cion showing short bevel. (2) Base of cion showing side view of bevels. (3) Base showing long bevel.

Photo courtesy Ohio Experiment Station



Bridge grafting will often save injured trees. It must be done in the Spring, following the time of the injury, when the bark can be slipped.



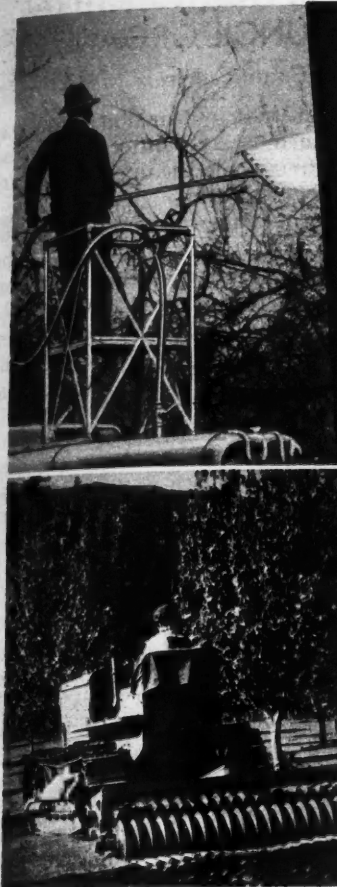
It takes time and effort to apply such a graft as this at the bottom of a tree trunk, but the time and effort is small compared with the possible loss of a productive fruit tree.



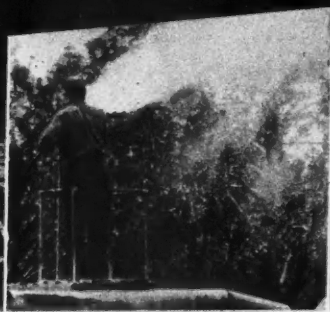
A girdled eight-year-old Stayman Winesap tree that is entirely supported by bridge grafts.



Bridge grafting alone can help save this rodent-damaged tree. Note snow shoes which enable this grower to inspect his trees in winter with a minimum of effort.



CULLS MEAN LABOR LOSSES AFFECTING THE ENTIRE CROP



THE ENTIRE CROP—including the culls—MUST BE CARED FOR ALL SEASON, THEN HARVESTED, AND FINALLY HANDLED THROUGH THE PACKING HOUSE . . .

When culls are cut down, profits are stepped up on the fruit that goes to market

All of the crop—the top quality as well as the culls—is cared for, picked, and handled through the packing house in the same manner . . . at the same labor cost. Naturally, the higher the proportion of culls, the higher the waste of labor . . . and the good fruit that goes to market must bear the cost of this wasted labor.

While every commercial grower knows that culls are lost fruit, too many do not realize that culls are also the cause of labor losses that result in excessive total costs which break down the potential profit on the good fruit. In fact, keeping down culls and the consequent labor losses often means the difference between profit and loss on the season's operations!

Plan in advance to cut down cull losses with a sound spray schedule and by using Orchard Brand in that schedule. Commercial fruit growers the nation over have found that, year in and year out, Orchard Brand means DEPENDABILITY.

**CUT
CULL
LOSSES
WITH**



For Apple Scab . . .

APPLE DRITOMIC* SULFUR

with the exclusive Sodium Thiosulfate feature that puts an "extra wallop" in scab sprays. Built exclusively for apples.

For Codling Moth . . .

ASTRINGENT LEAD ARSENATE

The flake-like particles and exclusive astringent features make it the standard choice where codling moth is toughest.

For Copper-Responding Fungous Diseases SPRAYCOP*

. . . With built-in Spreader-Adhesive. The advanced copper fungicide that has given outstanding performance in spray efficiency, ability to adhere longer, and retain effectiveness.

GENERAL CHEMICAL COMPANY

40 RECTOR STREET, NEW YORK 6, N. Y.

Sales and Technical Service Offices: Atlanta • Baltimore • Boston • Bridgeport (Conn.) • Buffalo • Charlotte (N. C.) • Chicago • Cleveland • Denver • Detroit • Houston • Kalamazoo (Mich.) • Kansas City • Los Angeles • Minneapolis • New York • Philadelphia • Pittsburgh • Providence (R. I.) • San Francisco • Seattle • St. Louis • Utica (N. Y.) • Wenatchee • Yakima (Wash.)

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would have made a killing

... except for the fact that he failed to guard against the possibility of an infestation of bud and foliage-devouring tree-climbing insects.

Like others of their kind, the cutworms, cankerworms, basket or bagworms, they struck where least expected, and what would have been a bumper year for Nate, was turned into a severe loss.

Don't wait until you have suffered a bad crop loss to discover that a fraction of such a loss would cover the cost of banding your trees and vines with Tree Tanglefoot for years and years. It's positive protection — a barrier that no climbing insect has been able to surmount in more than forty years. Band NOW, before the adults climb into the trees and lay their eggs. And be sure to get Genuine Tree Tanglefoot. The effectiveness of its formula has never been approached. For sale at your hardware or seed merchant.

THE TANGLEFOOT COMPANY • Grand Rapids 4, Michigan



Band NOW with
TREE TANGLEFOOT



The one effective method of stopping all climbing bud and foliage-devouring insects.

U. S. HORTICULTURAL COUNCIL ORGANIZED

(Continued from page 9)

distribute the information to the various member committees, or to the committee which the information particularly concerns.

Of prime importance to both the industry and the government will be the collection and preparation of factual data. As time evolves, detailed objectives and duties will become more complex. Hence, it is the desire of the industry to set up an organization that can work smoothly and efficiently towards the best interest of the industry and the nation as a whole. Ways and means have been left open for the expansion of the Council. As the by-laws read, the United States Horticultural Council will serve only in an advisory capacity, not actually engaging in trade.

Following the typical "Motz philosophy," the Council was organized on a purely industrial basis, no government men serving in any official capacity in the organization. It has long been the thought and request of Mr. Motz and other government officials that if and when such a national council be organized, it must be independent of government. The Council must be fostered, financed, developed and manned by members of the horticultural industry. Otherwise its usefulness and value to the industry would be questionable. Government officials, however, are, from their experiences, able to offer advice and assistance to the organization and functions of the Council. This was very ably done by Mr. Motz and Mr. Kitchen at the Chicago meeting.

Of whom shall the Council consist? How shall it be organized? At the Chicago meeting, the Council was established along commodity lines. Ten commodity groups were suggested as the basis for organization. A national commodity committee is to represent each of the following horticultural commodities: apples, pears, citrus, table grapes, stone fruits, dried fruits, tree nuts, canned fruits and vegetables, and potatoes. Others may later organize and become members of the national council upon meeting the requirements set up by the national council when fully organized. Each commodity committee is to organize itself and is to include all important phases of that particular branch of the horticultural industry. For example, the apple commodity committee would include in its membership growers, grower-shippers, distributors, exporters, etc. Each committee is to organize in whatever manner it

(Continued on page 28)

SPRAY STRATEGY

for the
Coming
Season

Here are

PRACTICAL SUGGESTIONS:

Fruit production this year will again be a vital part of our war economy. Growers must produce bigger, better fruit crops by means of more efficient orchard operations. Success will depend largely upon your **SPRAY STRATEGY**. Every grower should plan his insect and fungous disease control program with the greatest possible care and foresight. Spray materials must secure maximum results, if you, as a grower, are to contribute in a practical way to the nation's continuing wartime needs. Plan early—order early.

FOR CODLING MOTH CONTROL

S-W ARSENATE OF LEAD

Your spray strategy for '45 calls for an Arsenate of Lead that gives heaviest deposit, such as that produced by Sherwin-Williams. This proven Arsenate of Lead is 98% pure Arsenate of Lead, which is 2% higher in content than some other Arsenates of Lead. S-W Arsenate of Lead does not contain a deflocculator or flocculating agent because the addition of these would reduce efficiency by reducing the deposit on sprayed fruit.

S-W SPRALASTIC

Regardless of what Arsenate of Lead you use, providing it is standard, 98% pure Arsenate of Lead, and does not contain a deflocculator or an astringent, your spray strategy calls for S-W Spralastic. This spreader and deposit builder will increase the deposit of S-W Arsenate of Lead on apples 3 to 4 times. It also possesses ovicidal value in the control of Codling Moth.

S-W SAFE-N-LEAD

For safety and the protection of apple foliage throughout the growing season, use S-W Safe-N-Lead to completely neutralize the water soluble arsenic found in Standard Arsenates of Lead. When added to Standard Arsenate of Lead in the spray tank, S-W Safe-N-Lead converts the water soluble arsenic into a stable compound which will not "burn" apple foliage, but stimulates the growth of healthy, green leaves.

S-W SUMMER MULSION

Severe infestations of late-brood codling moth cannot be controlled with Arsenate of Lead alone but call for the use of a dependable white oil emulsion such as Sherwin-Williams Summer MulSION. It is used with Arsenate of Lead to destroy the eggs of late brood codling moth.

These Recommendations apply East of the Rockies only.

Let Sherwin-Williams help you plan your Spray Strategy. Send for Free Folders giving full details of the proven effectiveness of these Sherwin-Williams products.

FOR SCAB CONTROL

S-W DRY LIME SULFUR

Here is stabilized Liquid Lime-Sulfur in dry, powdered form. It is recommended as a dormant spray for apples, pears, peaches, cherries, plums and other fruits for control of San Jose Scale and Peach Leaf Curl, and as a summer spray for control of Apple Scab.

S-W MULSOID SULFUR

This is a micronized wettable sulfur (particle size 3 to 4 microns) recommended as a spray for peaches to control Brown Rot and Peach Scab, as well as for spraying apples and pears for the control of Scab in the after-bloom sprays.

FOR APHIS CONTROL

S-W DINITROL

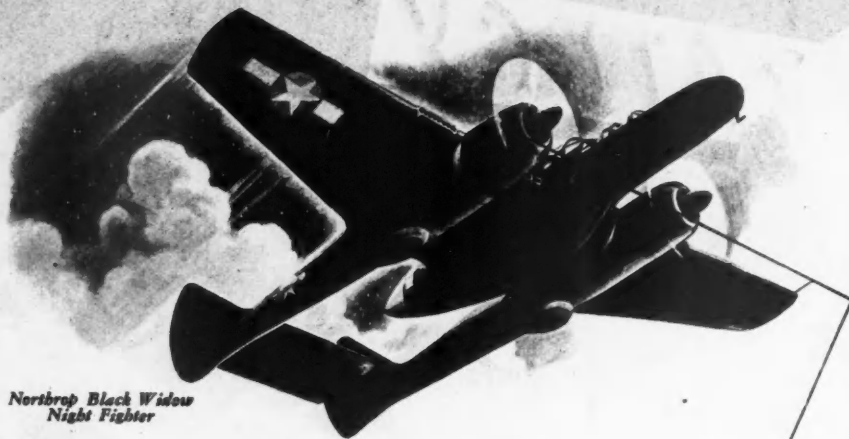
Because of the wartime shortage of nicotine, S-W Dinitrol, a dry mix compound of Dinitro-Ortho-Cresol is especially recommended as a dormant spray combined with oil emulsions for the control of Rosy and Green Apple Aphis, San Jose Scale, European Red Mite, Scurfy Scale and Apple Leaf Roller.

SHERWIN-WILLIAMS SPRAY MATERIALS

INSECTICIDE DIVISION

101 Prospect Ave., N. W.

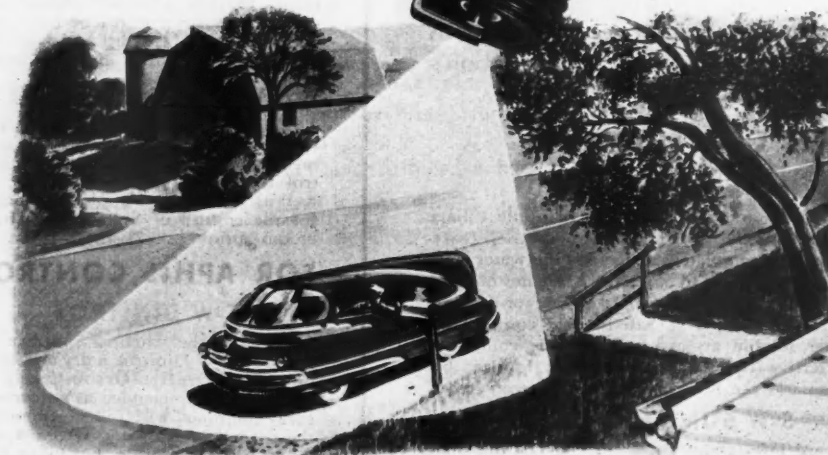
Cleveland, Ohio



Northrop Black Widow
Night Fighter

PRESTIGE ESTABLISHED IN THOUSANDS OF COMBAT MISSIONS!

The Champion Spark Plugs you buy today for your car, bus, truck or tractor are blood brothers to the Champion-Ceramic Aircraft Spark Plugs which are setting such outstanding records for performance and dependability in our most powerful aircraft engines. This prestige and the same basic materials, precision workmanship and dependable performance that make Champion's record unique in fighter planes and bombers, insure a generous extra measure of performance and dependability in every engine. Demand dependable Champion Spark Plugs. Champion Spark Plug Company, Toledo 1, Ohio.



CHAMPION

SPARK PLUGS



BUY MORE AND MORE WAR BONDS UNTIL THE DAY OF VICTORY

U. S. HORTICULTURAL COUNCIL ORGANIZED

(Continued from page 26)

sees fit to do so. Each committee so organized is to assemble data and information regarding its particular commodity, analyze this material and advise or recommend to the National Council appropriate action in regards to proper international procedures.

The United States Horticultural Council is to be composed of one or more, but not over three representatives from each commodity committee. It is up to the individual committees to determine whether its interests can best be represented by one, two or three representatives on the national Council. The apple committee plans three representatives, based on geographical distribution, one from the Northwest, one from the Midwest and one from the East. In voting in the national council, each commodity committee shall have only one vote. Thus, the apple committee will have just one vote in any matter which comes before the Council, and not three votes.

To get things under way immediately, a temporary council of ten members, one from each commodity group, was organized at the Chicago meeting. The officers of this temporary council elected in Chicago are, President, Marvin H. Walker, Lakeland, Florida; Vice President, J. A. Smith, Seattle, Washington; Secretary, R. W. Gray, Sacramento, California; Treasurer, Henry W. Miller, Jr., Paw Paw, West Virginia. These officers together with the representatives of 5 or more of the organized commodity groups shall meet and establish the permanent United States Horticultural Council. This meeting has been set for March 29 and 30 in Sacramento, California. Permanent officers will be elected, by-laws adopted, financial support determined, and other necessary functions performed which will give the organization ample credentials and facilities to operate and be recognized by the federal government.

One of the big problems facing the Council is the election of someone to serve in executive capacity. It will be the duty of this leader to properly carry out the deliberations and actions made by the Council. He must be one with experience in both the field of horticultural production and foreign or international trade. This opinion was voiced by the representatives at the Chicago meeting. An executive secretary to manipulate the detailed business of the Council is to be employed when the national organization is completed.

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Within the Council certain committees will be appointed whose duties will be to collect and disseminate specific types of factual data. For example, a permanent legislative committee will be appointed. The duties of this committee will be to recommend the introduction and passage of legislation which will safeguard the Council and its members in all matters pertaining to anti-trust and other mandatory legislation; to acquaint itself with the laws of other countries, particularly to anti-cartel laws; to obtain the services of an attorney in Washington, D.C. On the whole, the committee will serve the purpose of fostering good trade practices on the seas. One of its first great problems upon formation will be to recommend a policy to be followed in establishing international trade agreements.

N. Y. MEETING NOTES

(Continued from page 23)

their problems with other growers and the specialists. Among other highlights of this important eastern fruit meeting were Dr. M. B. Hoffman's discussion of blossom sprays and Dr. R. M. Smock's discussion of "air-conditioned" apple storages. Both of these men are on Cornell University's horticultural staff.

Small fruits came in for discussion by Dr. G. L. Slate of the Geneva Experiment Station. Promising new varieties growers were interested in learning more about were the Bristol black raspberry, Indian Summer, an "everbearing" red raspberry, Seneca, a white grape, and the Catskill strawberry.

Apple marketing was reviewed by Carl Schendler of the Loblaw Stores, Buffalo, New York. He emphasized prepackaging of fruit, particularly apples, as being a coming thing in marketing.

John Chandler, Executive Secretary of the National Apple Institute, and Carroll Miller, Manager of the Appalachian Apple Service, reiterated their stand on the need for improvement of grower organizations. Mr. Chandler pointed out that it was the influence of the N. A. I. in Washington that produced a ceiling price 30 cents per bushel higher than the price would have been.

Growers reported alarm over the recent draft order affecting farm labor. Many growers are now operating with only skeleton crews of skilled workers.

ONE SEASON NEVER DID MAKE A STAR!



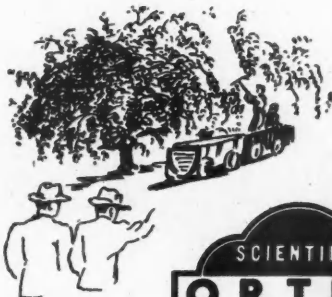
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for their high quality.

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THE ELECTRIC STORAGE BATTERY COMPANY, Philadelphia 32
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DISEASE INJURIES

(Continued from page 12)

It is noticed as cankers of more or less localized dead areas of bark which later become open wounds. The cracking and splitting of the bark may be accompanied by the exudation of gum. The cankers may continue to develop until the twig is completely girdled and dies.

Just following blossoming, the disease may attack young leaves and succulent shoots causing them to turn brown and die. During moist weather even the flowers may become infected, turn brown and become soft showing the whitish fungus tufts noted on the fruits.

Peach Yellows

Peach Yellows is most readily observed in the character of the foliage and fruit. The leaves are pale green to yellow, small, narrower than normal, drooping and rolled or curled giving them a more or less tubular form. The infected fruits ripen prematurely, often larger than normal, watery in texture, possessing an insipid flavor and frequently speckled with red. The term applied to infected shoots is "willow" or "broom" shoots. They are more slender and more branched than normal shoots, somewhat wiry in nature, and covered with small yellow leaves often speckled with red. This is a virus disease, but is included in this discussion because of its significance in most peach growing areas.

Peach Scab

Peach scab infected fruits are noticed by the small, circular dark-olive colored lesions or spots on the surface of the fruit. The spots may coalesce forming dark-velvet blotches.

Scab infected leaves show small, angular, pale-green spots on the lower surface at first and later both sides show the spots which then become dark green in color. Long, narrow, brown lesions develop on the midrib of the leaf. Infected twigs are characterized by light brown, oval lesions, one-eighth to one-fourth inch in diameter. These appear on young tender twigs about the same time that the spots appear on the fruit. Later the lesions enlarge, become brown, slightly raised and at the edge develop a peripheral ridge of almost normal color. These spots may coalesce giving rise to large, irregular shaped areas.

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Bacterial Spot of Peach

Brown, irregular spots on the leaves may be caused by bacterial spot of peach. These later fall out giving a shot-hole appearance. On the fruit, brown, irregular spots appear followed by cracking of the fruit in the diseased area. Infected twigs show water-soaked areas, slightly sunken, and brown to purple-black in color. This same disease infects plums.

Injuries of the Pear

Fire blight is perhaps the most serious disease of pears. It has been this disease that has prompted so much research in the field of pear breeding in an effort to obtain a blight resistant variety that is equal to Bartlett in quality. The effects upon the tree are the same as described for the apple since it is caused by the same bacterial organism. This disease sometimes injures other cultivated fruits.

The pear is susceptible to brown rot, the same disease that attacks the stone fruits and occasionally apples. The characteristic fruit rot can be distinguished from other fruit rots by the concentric rings of gray or pale brown tufts covering the rotted area. These appear in the later stages of development of the disease. The other symptoms of this disease are the same as described for the peach.

Pear scab is frequently seen on the fruits of pear. The disease first manifests itself as olivaceous spots that are velvety and circular in outline. Later in the season they become corky and the skin may crack, often in a T-shape. Immature pears often drop, while affected mature fruits are distorted.

The appearance of very similar spots occur on the leaves. They are very conspicuous on the lower surface of the leaf. The spots on young twigs suggests the presence of a scale insect. On older twigs the bark sloughs off.

Injuries of the Plum

Brown rot, as already discussed, is a serious disease injuring the plum. The symptoms are the same as for the peach; both being caused by the same organism.

Black knot is a common trouble on plums and cherries in the eastern United States. It is first evident as a swelling in a twig or branch. Later the bark splits and a straw-colored granular growth fills the crevices. As the season advances the overgrowth becomes darker and takes on a greenish cast and by the next year

(Continued on page 32)

Another billion dollar highway program



IN thinking about work after the war, don't overlook the 230,000 miles of steel "highways" which the railroads have built and maintain at their own expense. These "highways" provide jobs for more than a quarter of a million men working on construction and maintenance of tracks and roadway—jobs for more than a million other railroad workers—besides still other thousands in the mines, the mills and the forests where roadway materials and supplies are produced.

More than that—the railroads pay real taxes on these "highways," not for their own special benefit, but for the support of schools and other general services, including

public highways and streets.

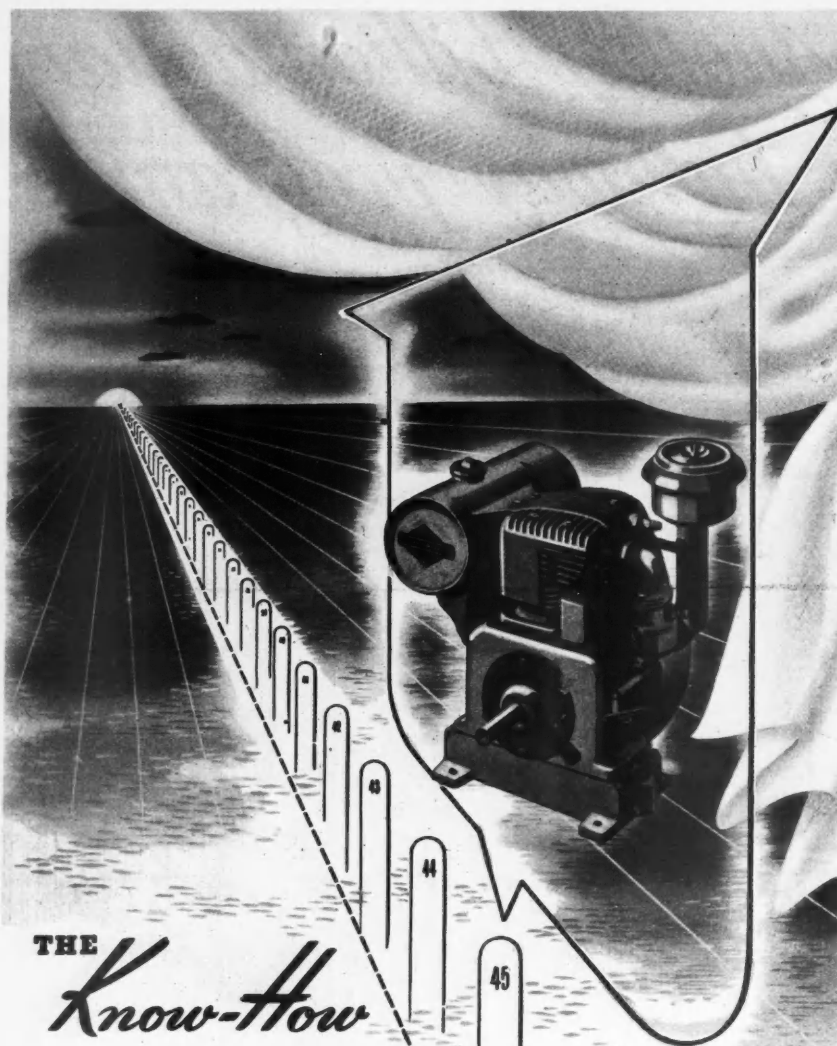
After the last war, between 1920 and 1930, the railroads spent more than four billion dollars for improvements on these "highways," and in addition more than three-and-a-half billion dollars for betterments in equipment. After this war, a similar program will be required.

So there's another highway program which could make a lot of postwar jobs, and which needs no more than a public policy of treating all forms of commercial transportation alike—letting each one pay its own way, which includes the payment of the general taxes upon which governmental services depend.



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DISEASE INJURIES

(Continued from page 31).

the entire swelling becomes black, hence its name. The knots vary in size and shape and appear on twigs or older branches up to 2 inches in diameter.

Leaf blight, leaf-spot or shot-hole, as it is variously called, is sometimes troublesome on plums. On the leaves the disease first appears as brownish spots which later die and fall out, leaving a circular hole. At times the leaves may be completely riddled and often they turn yellow.

Black spot is another foliage disease of plum. It also affects the fruit and twigs. On the leaves the symptoms first appear as dead brown areas which later die and fall out. But, the holes are irregular and usually larger than the circular holes of the above disease. Affected fruits are distorted and cracked with black spots developing on these affected areas. The black spots on the twigs persist from year to year forming perennial cankers. The bacterium causing this disease is the same as that causing bacterial spot of peach.

Injuries of the Cherry

Aside from the common stone fruit diseases already discussed, the cherry is affected by others, but fortunately most are of only slight consequence in most sections of the country.

Cherry leaf-blight, yellow-leaf or leaf-spot, as it is sometimes called is among the most prominent cherry diseases. In the latter part of May or early June the affected leaves become slightly discolored, dark blue areas develop on the upper surface. These spots, usually not over 1/8-inch in diameter, may be scattered over the whole leaf blade or only on a part of it. Within a week these spots change to a dark or reddish brown. Later they may drop out, leaving circular areas in the leaf. Yellowing of the leaves usually accompanies the disease.

Cherries are sometimes affected with bacterial gummosis. Though not often serious, the trouble is readily observed, particularly on sweet cherry varieties. Often no indication is apparent until the whole tree or branch fails to leaf out. Examination will reveal lesions or cankers girdling the branches or entire tree.

This is the second of a series of two articles on fruit injuries by Eldon S. Banta. The first article on Insect Injuries appeared in the February issue of AMERICAN FRUIT GROWER. Photographs accompanying this article are through the courtesy of the Bureau of Plant Industry, Soils, and Agricultural Engineering, U.S.D.A. and the Department of Plant Pathology, New York State College of Agriculture.—Editors.

INSECTICIDE DDT

(Continued from page 14)

the woolly apple aphid infestation flared up in DDT-sprayed trees. The increase in mite or woolly aphid abundance is assumed to be due to the effect of DDT on parasites or predators that normally hold these pests in check. DDT might also play havoc with bees and wild pollinating insects if the material should come into general use.

The foliage on a number of the DDT-sprayed apple trees has been in very poor condition—bronzed, with extensive dead or dry areas. In some cases there has also been rather severe defoliation, fruit dropping, and some reduction in size of fruit. Most of this condition has been attributed to the excessive mite populations, but some of it may have been caused directly by the insecticide, perhaps accentuated by the weakening of the foliage by the mites. Except for the conditions just mentioned, which can probably be overcome by controlling the mites, the danger of injury to fruit trees does not appear serious. A final judgment in this matter must wait until the tests have been made under a wider variety of weather conditions, and until it is determined what accumulations of DDT in soil may do to trees or to cover crops.

As indicated earlier, DDT does not mix readily with water. It is very hard to handle, and much further work needs to be done with its formulation for use in the spray tank. Most of the current DDT production is for military purposes, and is not in a form that could be used for orchard spraying.

Even if the work with DDT had been carried far enough to warrant a general recommendation of its use for codling moth control, there is no assurance that the material would be available for commercial use in 1945. Certain of the basic chemicals used in producing DDT are critical war materials and have been released for the production of DDT primarily for war purposes. With the exception of limited quantities permitted for experimental work, military needs have thus far absorbed the entire output. The War Production Board must, of necessity, give priority to the war needs for DDT, because of its use in the control of insects that transmit diseases such as malaria and typhus, which in many previous wars killed more soldiers than enemy bullets or bombs. Between the lives of American boys and the use of DDT for codling moth control there is, of course, only one choice.

(Continued on page 34)



Five Tons and It's All His

Each soldier, heading for a fighting front, is supported by five tons of supplies . . . requires one ton per month while overseas.

The Army's Transportation Corps supervises the tremendous task of getting these supplies aboard ship, sending them to overseas ports, distributing them to far-flung battle fronts. One Transportation Corps company traveled 225,000 truck miles in England and France between D-day and the end of June.

Backing up the Army's Transportation Corps on the home front, 24 hours a day and seven days a week, are America's four million commercial motor trucks.

These hard-working, highway haulers are indispensable to the production and transport of virtually every one of the 700,000 different articles of food and fighting equipment required by our millions of overseas soldiers. This is evidenced by the estimates that 75 per cent of today's truck loads are war loads.

In addition to being one of the largest producers of military vehicles, GMC is also building many commercial trucks for essential users. If you are eligible for a new truck, your GMC dealer will gladly help you fill out an application. Remember, too, that GMC is headquarters for the original Preventive Maintenance Service.



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20.6% NITROGEN
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Nitrogen—in the form of Granular 'Aero' CYANAMID—fits perfectly into programs of orchard soil improvement and maintenance. Successful orchardists everywhere prefer to fertilize with Granular 'Aero' CYANAMID.

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OUR 58th YEAR

MILLS SEED HOUSE Box A ROSE HILL, N.Y.

RABBIT DAMAGE

(Continued from page 24)

tom. Take care that the bevels on the cion are both on the same side.

Above and below the girdled area, the bark is then slit with a knife and the edges are loosened. The lower end of the cion is fitted into the slot in the bark and secured with two small nails, taking care that the beveled cut is on the inner side against the wood of the tree. The cion should be bent in a bow shape until the upper bevel can be inserted into the upper slit of the bark and pushed upward into place. The injured area should have enough cions set over it, so that the cions will not be over 2 inches apart. Good cions for bridge grafting can be made from water sprouts or long one-year terminal growths. Thoroughly wax the point of union at both ends of the cion. To keep the bare wood of the tree from drying out, it is usually best either to wax or to paint it; the whole surface of the injury is sometimes painted with melted paraffin or brush wax.

The grafted cions will increase in size in a few years until they completely cover the girdled trunk with a shell of new growing wood and bark. Even during the first season after grafting, trees treated in this way will not suffer in the slightest degree, provided most of the cions make a successful union.

Sometimes, because so much of the bark has been destroyed, it is impossible to attach the lower part of the cion to the base of the tree. In such instances, one-year-old nursery trees can be planted at intervals around the base of the tree and the tops can be grafted into the healthy tissue above the injury. Cut the small trees to the proper height, bevel the top, and then slip the top under the edge of the bark after which it is treated as a bridge graft. Fruit growers have saved many valuable trees in this way.

INSECTICIDE DDT

(Continued from page 33)

During 1945 larger quantities of DDT are expected to be available for experimental purposes, including a limited number of large-scale practical orchard tests. Consequently more entomologists will be testing DDT in 1945 than in 1944, and the tests will be more extensive. By 1946 much more will be known about the possible uses and limitations of this remarkable new insecticide, and entomologists should then be in better position to make practical recommendations concerning its usefulness for the control of orchard pests.

IN THE NEWS

E. S. GRAHAM

E. S. Graham of Lowell, Arkansas, served as President of the Arkansas State Horticultural Society in 1926 and now, in 1945, he again fills that post.

Of pioneer Northwest Arkansas stock, Mr. Graham helped his father grow apples until, as a young man he was able to purchase an orchard of his own.



E. S. GRAHAM

He has been elected to the Arkansas Legislature five times, and each time he has taken his interest in horticulture with him to the Capitol. He helped materially in passing the first Soil Conservation Act in the Nation. The State Plant Board, with its inspection of nursery stock and its federal-state inspection of fruit, has always received his unflinching support.

Today Mr. Graham's business includes not only an orchard of one hundred acres planted in apples and peaches, but also a large number of poultry and livestock.

AIRPLANE SPRAYING

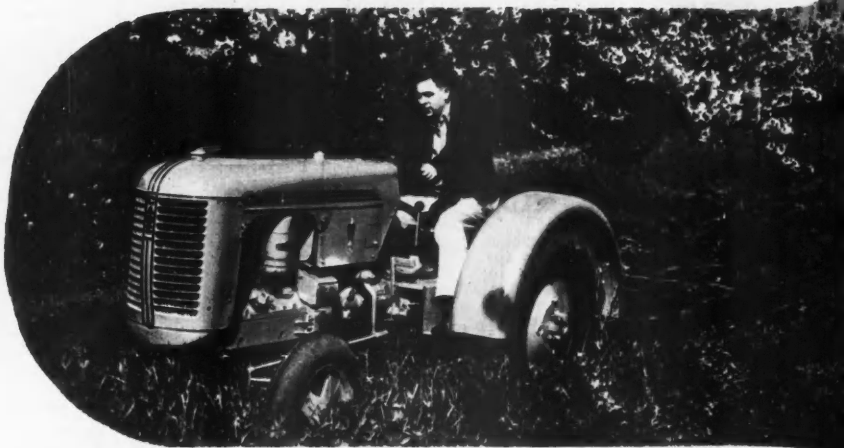
(Continued from page 13)

sprays by the conventional method.

This new and revolutionary method of applying harvest sprays in liquid form was developed during the past season by the Yakima Laboratory of The Sherwin-Williams Company in cooperation with Central Aircraft of Yakima, Washington. While pre-harvest plant hormones have been applied in dust form, The Sherwin-Williams Company is first in the development of a liquid hormone spray to be applied by airplane.

The development in the application of harvest sprays opens up a new field for civil aviation. Central Aircraft at Yakima is planning to equip three additional planes to apply harvest sprays during the 1945 season. This will be of tremendous importance to the apple growers of the Pacific Northwest because it will mean that they can apply their harvest sprays regardless of labor shortage or other factors hampering ground spraying. The airplane-applied harvest spray can go a long way in protecting the grower's investment in his crop.

By Their Fruit You Can Tell



"Gets More Work Done than any other tractor in its size and price class," say many owners of the Case "VO" tractor, shown above in an Oregon orchard. Three larger sizes, ranging up to the 4-5 plow "LA" enable you to choose a Case tractor which best fits your acreage, row spacing, and implement size. Easy handling, quick turns, handy fueling, and fast travel altogether add up to more work done sooner with the manpower and equipment you have.



One Man, Non-Stop Spraying. Owner of this Case "SO" put "gun mounts" on the fenders for easier one-hand control of nozzle working at 600-lb. pressure, leaving other hand free to steer. At a speed as slow as 1½ M.P.H. in low gear he sprays on-the-go. All Case tractors have four gears forward — three speeds for fast work with every implement, a fast fourth gear for safe hauling. All have extra ENDURANCE for lower upkeep and longer life.

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SEE YOUR CASE DEALER for full information on tractors and implements and the chances for delivery. He will do his best to supply you as quickly as war limitations will permit. Use his shop service to keep your present equipment at the peak of operating performance and economy. J. I. Case Co., Racine, Wis.



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You can't beat the dependable Dobbins *Eveready Power Sprayer* for economical application of all spray solutions used to control insect and fungus infestations. It's *lightweight*, yet has ample capacity to handle all spray jobs for the individual owner and small grower... even for spraying whitewash and liquid fertilizer. Until production restrictions are relaxed we can manufacture only a limited quota of these power sprayers, and therefore the supply will be limited. If your local Sprayer Dealer has none in stock, plan now to buy when available the model meeting your requirements. Catalog will be furnished on receipt of your request.

The Dobbins Flame Sprayer, right, is ideal for killing weeds, disinfecting, sterilizing, etc. Develops 2000° F. of easily portable flame heat. Burns kerosene distillate or stove oil.



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from 1½ gal. to
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THE JAPANESE WAR ON THE FRUIT FRONT

(Continued from page 15)

lowed, a barrage which was repeated frequently throughout the season.

Just after the application of the first two sprays of lead, the Japs became very active. Each Jap, as he emerged and acquired camouflaged wings and bodies came into battle. The bodies of the females were loaded with one to two hundred small transparent bombs which, dropped on or near the apples, were ready to burst, each releasing a tiny baby Jap in five to eight days. This tiny Jap soon began to move around, and began the attack by digging a fox-hole down to the seeds of the apple. These seeds he consumed, and this necessary baby food was so nourishing that he grew rapidly, and soon dug another tunnel to the surface of the apple, where he spent a day or two, working around, and throwing up a fort of frass, through which his head bobbed occasionally. He went on feasting a few hours longer, growing larger.

He had accomplished his mission, the destruction of the apple, and being fully developed, he crawled out to seek a comfortable place in which to hide and hibernate, to prepare for his next objective. This objective was the creation of another generation, bent upon the destruction of our apples.

This was only one Jap in the Battle No. 2, a sample of the activity and the power for destruction of thousands and thousands of others in this first brood, and in the two broods that followed. During all this progressive increase and destruction, our noble volunteers were killing thousands of Japs each day they sprayed, following a carefully timed schedule based upon the development of each of the three broods.

At the end of the harvest in 1942, I was much pleased with the cooperation and the fine spirit and interest of our volunteers, and the results of their good work. The quality of the fruit was good, better than had been expected; prices were high; and we wound up with a satisfactory profit for the year.

The battle in 1943 was very similar but more difficult than the first year, due to a longer season with hot weather. The kill of Japs was almost as good as the first year, except in two small blocks of the old orchard. We had a large crop of fine apples, with high prices. Considered from all angles, it was one of our most profitable crops.

Thus ends this Jap war of 1942, 1943, and 1944. The beginning of

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FORGED ALLOY STEEL
No. 528 Long handle, keen "dual" cutting action; FULL LENGTH 28 inches; \$4.00. No. 124—Imported style Hand Pruner; full length 8 inches; \$3.00. At your dealer's.
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the planning for the campaign of 1945 is before us. For forty-six years I have been on the firing line, fighting the same breed of Japs. We have won many battles during this long war. We have not won the Victory. We all have been fighting annual battles, in the field for half the year, then virtually consenting to an armistice with the Japs until spring, knowing that they are entrenched in our orchards, ready to continue the war when the winter is past.

I ask these questions. Can we win the victory over these Japs while we admit that we must fight these battles annually? Or isn't it time, and isn't it possible to plan some additional method whereby we may win victories by mopping up the Japs in hundreds of acres of orchards which they have invaded, and which they now are using as their camping grounds and winter resorts?

May I make this suggestion. Every commercial orchard should be considered a unit in itself. Each unit should be headed by a production captain. This captain should follow the latest information, and spray schedules given out by their State Experiment Station, and their State and Government entomologists.

Every captain should feel an obligation to do more thorough spraying. If his neighbors have unsprayed orchards, he should tell them the gist of this story, and urge them to unite in stamping out these Japs who are yearly destroying their apples, and also using their unsprayed orchards as free camping grounds. From these orchards thousands of Japs will fly into well-sprayed orchards and ruin fruit, in spite of the owner's best efforts, fruit which should go to our soldiers and to the world.

If we can get this cooperation from our good neighbors who have been neglecting their orchards, millions of bushels of apples, now ruined by the Japs and a waste to the world, will be saved.

I further suggest that the owners of unsprayed orchards, or abandoned orchards, cooperate by doing one of two things, either thoroughly spray the trees that can be made profitable; or, volunteer to cut down, clean up, and burn all infested trees in areas which the Japs have taken as their own and are using as breeding grounds. With this cooperation, we can unite our forces. Remembering the declaration of the Leaders of the Allied Forces, we can say to our Apple Japs that we are united for Victory, that we propose to strip them of all land and orchards possible which have been invaded and over-run during the past fifty years, and that we demand unconditional surrender.



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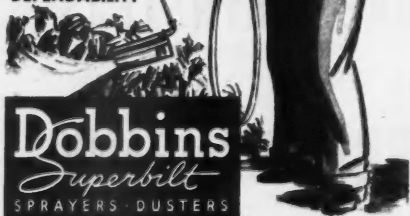
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Edcor System

WINTER PEARS

(Continued from page 17)

sentative number of boxes is taken with a fruit thermometer. If pears are sufficiently well started on the road to final ripening, they go into immediate sale. If not, the fruit is placed in the warm room to prepare it for sale. Usually several days under warmth are required.

The process involved is almost identical with that used in conditioning tomatoes and bananas which, like late pears, need pre-ripening to make them salable and edibly satisfactory to homemakers. Room temperature, humidity and air circulation are rigidly controlled throughout the entire operation. Even the boxes are stacked scientifically to insure uniform ripening.

The temperature for any given lot of pears may be from 60 degrees to 70 degrees F., the ripening range as set by Dr. Hartman. The field technicians watch the fruit carefully to bring core temperature up to the desired degree. Humidity must be high to prevent absorption of moisture from wraps, fruit, boxes, etc., that would lead to shrivelling.

Once the conversion of starches to sugar has been adequately started, the process is reversed and core temperatures must come down again. The chilling process is invoked for 24 to 36 hrs., at 32 degrees to 35 degrees F., to "put a brake" on continued ripening and assure holding quality of the pears through regular channels of trade and normal period of retail display. The pears remain firm and "keepable" but are juicy and flavorful inside, redi-ripe for immediate eating when purchased.

When the Bureau's "conditioning" program was adopted, domestic carlot markets for these late western pears numbered but seven. These cities absorbed about 40% of the annual crop, with exports to Europe and South America taking another 45% and the remaining 15% being dribbled out here and there over the balance of the entire United States. Today carlot markets have been quadrupled and then some. Judgment in selecting new markets for "opening up" has led to a fanning out of distribution from carlot centers that are national in scope.

An unparalleled accomplishment is the ease with which the 45% of the crop formerly exported found domestic placement when World War II cut off exports, and at higher prices than the fruit had brought in export. To this increased load on the home market has been added the output of

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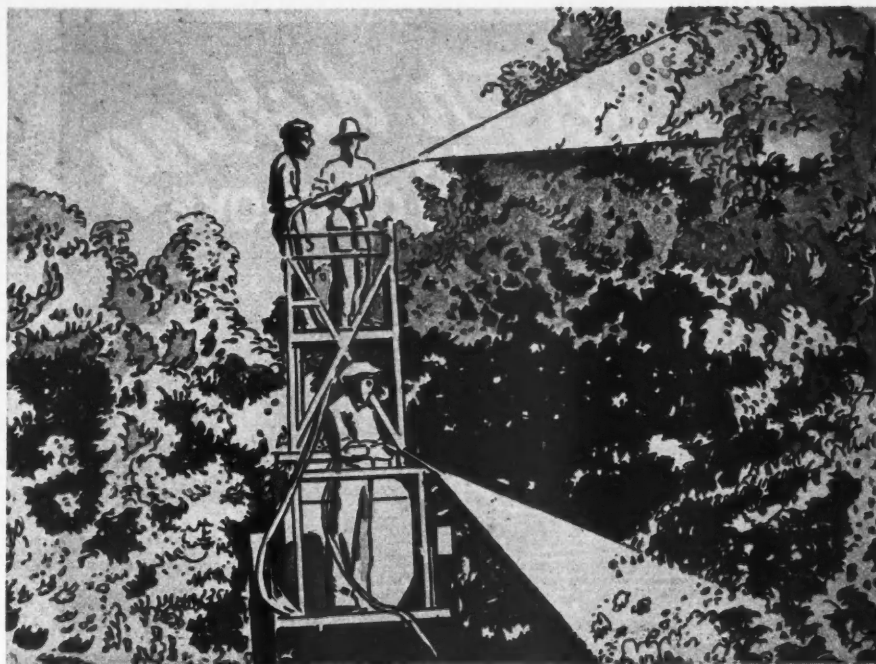
young orchards coming into bearing, with scarcely a ripple on the distributive surface. An idea of increased production is gained from statistical reports showing over twice as many late pears now grown in Oregon alone as were produced in Oregon and Washington together not many years ago. Average annual production for the ten-year period 1933 to 1942 incl. was as follows:

Washington	1,868,000 bu.
Oregon	2,217,000 bu.
California	1,229,000 bu.
Total	5,314,000 bu.

The estimated 1944-1945 crop of 5,238,000 bu., while 52% over last year's crop (the shortest in the ten-year period), is slightly below average.

Along with its "conditioning" policy, the Bureau adopted a program of widespread dissemination of menu-making and nutritional information about pears. Educational material is issued to home economists, dietitians, food editors, radio commentators, cook-book editors, hotels, restaurants and institutions as well as to wholesale and retail trade. Consumer booklets are published and dealer service posters, pennants, and banners, are supplied to the trade. Both consumer and trade advertising is spotted locally and regionally to coincide with "conditioning" operations, and the services of an experienced advertising writer are made available without cost to private concerns preferring to conduct their own advertising programs on "conditioned" pears.

It is part of the Bureau's mission to educate wholesale and retail tradesmen to the merchandising of "all fresh pears in their proper seasons" with better results and better profits for all, and what is even more important, consumer satisfaction that keeps fresh pears a wanted produce item for ten months of the calendar year. In this way merchants can profit and consumers enjoy fresh pears from the start of the Bartlett season in July to the end of the later pear season in May. Official Bosc season is Sept. to January; Comice, October to February; Anjou, October to May; Nelis, January to June. Progress made by the Pear Bureau in storing, shipping, transporting and popularizing the late pear varieties has done much toward extending the fresh pear year so successfully and beneficially to industry and public alike. With a backward glance to 1931, optimistic growers and shippers are already envisioning the happy day when demand could easily outstrip production by a very wide margin.



Repairability

- Experience of growers during the war years has emphasized as never before the priceless value of Repairability in a sprayer. Ease and low cost of repairs and replacements are worth as much as performance and quality.

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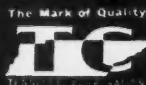
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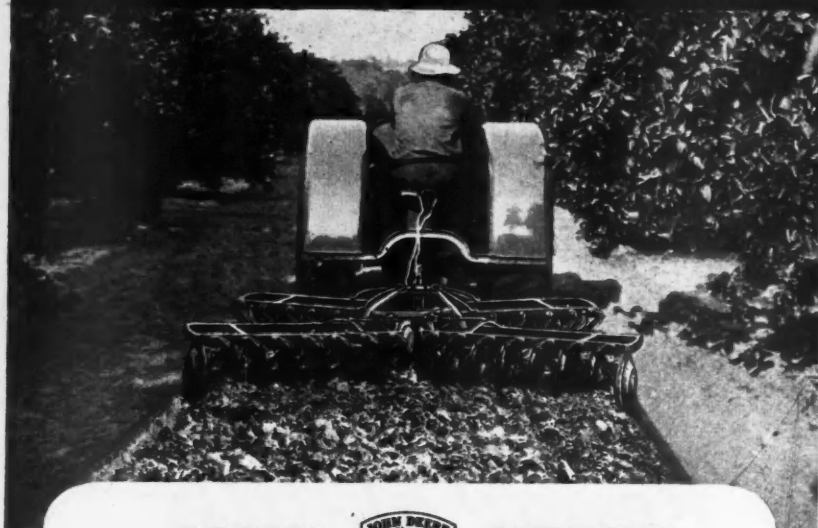
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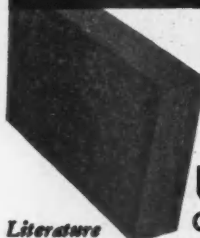
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An accurate textbook on orcharding and fruit culture by Dr. J. H. Gourley and Freeman S. Howlett.

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1370 Ontario St. Cleveland 13, Ohio

LEGUMES AND NONLEGUMES ARE STUDIED FOR COVER UNDER APPLE TREES

STUDIES on the effect of different cultural practices and soil nutrients on soil moisture have been under way for six seasons by horticulturists of the West Virginia Agricultural Experiment Station.

Various legumes and nonlegumes used as sods have indicated several things of value to the commercial apple grower, in the opinion of Dr. R. H. Sudds, associate horticulturist.

Korean lespedeza is not adapted for use in orchards on the limestone soils, which are superior for apple growing, he points out. "This plant species cannot compete with weeds and bluegrass on our better soils, although it will do so successfully on poor, shaly soils."

Ladino clover—a large type of Dutch white clover—was found outstanding as a low-growing legume which thoroughly protects the soil from erosion and water loss. It adds nitrogen and apparently competes very little with the food and moisture supply of the apple trees.

Dwarf sweet clover has resulted in an excellent sod of lessened competition with the trees, as compared with the full-sized or standard type of sweet clover. It is easy to get a good stand of this legume. Dwarf sweet clover can be mowed in dry weather to check its growth if necessary. This way it can still maintain a good legume sod.

Crown vetch, a legume new to orchard use, was promising, according to Dr. Sudds. A long-lived sod was expected to result—one which might outlast alfalfa by several years. Although crown vetch will endure heavy shade, low soil fertility, a fairly high degree of acidity for a legume, and severe abuse resulting from necessary orchard operations, it is very difficult, if not impossible, to secure an adequate stand. Hence crown vetch is no longer thought of as a legume sod-former for orchard use.

While bluegrass sod, plus added mulch spread under the branches of the trees, has shown excellent possibilities, it has demonstrated the absolute necessity of securing better-than-average mouse control.

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WAR SURPLUS PROPERTY

THE disposal of automotive vehicles, the leading activity of the Procurement Division of the Treasury Department, the disposal agency for surplus-property consumer goods, has fallen off during the past few months, due to the fact that the Army is retaining supplies of vehicles that had been expected to be declared surplus. Disposals of motor vehicles in December were \$4,063,000 compared with \$4,741,000 in November and \$6,814,000 in October.

Farm equipment and construction machinery were offered for sale at Kearney, Nebraska on February 21 and 22, the sale being conducted by the Kansas City Regional Office of Treasury Procurement's Office of Surplus Property.

Among the 950 items of equipment offered for sale were 85 tractors, 76 graders, 83 scrapers, 35 concrete mixers, 8 shovels, 182 snow plows, 29 material spreaders, 82 material buckets, 47 compressors, 12 cranes, 140 pumps, 10 pavers, and 125 pieces of farm equipment, including hay stackers, mowers, discs, harrows, plows.

The "On-the-Spot-Bid-Method" was used in the sale of this equipment. This is a simplified, speeded-up selling method and solves the joint problems of fostering the wide and equitable distribution of surplus property, obtaining a fair price for the Government consistent with present market conditions, discouraging disposal to speculators and creating a fair and competitive method of distribution.

Contractors, builders, and all users of construction equipment, as well as farmers and users of farm and agricultural equipment and all other interested persons were welcome, but only Qualified Dealers in construction and farm equipment were invited to bid. Following the inspection period, the bidders assembled in the Armory Building in the city of Kearney. As each item was announced for sale, a bidder turned in a card, with amount of bid, firm name and article.

Recent offerings of surplus property by the Treasury Department's Procurement Division have included an array of many hard-to-get items such as a large quantity of hardware ranging from nuts and bolts to spurs, tool chests, shovels, and wrenches. An unusually large assortment of standard automobile, truck and motorcycle parts have recently been distributed to the automotive supply dealers. Because of this constant flux of material, it is wise for the fruit grower to constantly check with his local dealers for scarce commodities.

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From where I sit ... *by* Joe Marsh

How Sober Hoskins Got His Name

Everybody kids Sober Hoskins about his name. Of course, they allow that it's appropriate. Sober never drinks anything stronger than a glass of beer. And a harder worker in the fields there never was.

"Shucks," says Sober's dad. "We named Sober 'Sober' just because he looked that way when he was born. Like we called his sister 'Gay,' and his other sister 'Prissy.' And it's had its effect on all of 'em," he adds with spirit. (Prissy is the old maid in the Hoskins family.)

From where I sit, there may be something in what Sober's

dad says. Naming children after virtues is a fine old American custom. Look at the names of our pioneers and pilgrims: Faith, Pious, Charity, Hope, Ernest.

Maybe we should use such names more often. And one I'd like to add is "Tolerance." If we all had Tolerance for a middle name, and lived up to it, we'd have a better, happier world.

Joe Marsh

APS

CONDUCTED IN THE
INTERESTS OF THE
AMERICAN POMOL-
OGICAL SOCIETY

A. P. S. OFFICERS MEET AT CHICAGO

OFFICERS and members of the A. P. S. met in Chicago January 29 to discuss the affairs of the society in relation to those objectives that best serve the fruit industry at this time. President Stanley Johnston, South Haven, Michigan, presided and reviewed a survey of horticultural opinion concerning activities in which the A. P. S. might properly be most interested. It was the almost unanimous opinion that there is great need for an extended survey and report on the new variety situation. During the past 25 years, literally thousands of new varieties of new fruits have been named and introduced. New varieties, in many instances, are "making good" and many soon will fall by the wayside. Grower experience with new varieties should be recorded, and made available to assist the fruit industry in appraising the value of new fruits which are on trial. It seems that the old and original function of the A. P. S. of collecting facts and information about new variety performance should again receive new emphasis. Accordingly, President Johnston will name a committee and set it to the task of surveying the new variety field. The results of these studies will be published by the A. P. S. and will be valuable to horticulturists, fruit growers and nurserymen.

The secretary reported that his office has completed the making of an index of all new fruit and nut variety names which have been published in the reports of the Committee on New Fruits and Nuts from 1920 to 1943. This index contains over 6700 names: Apples 1126, Peaches 940, Strawberries 606, Plums 531, Grapes 340, Pears 301, Raspberries 214, Crabapples 134, Blackberries, and Dewberries 170, Apricots 174, Cherries 198, Nectarines 88, Currants 80, Gooseberries 80, Miscellaneous berries 84, Plumcots 16, Citrus 119, Miscellaneous tropical and semi-tropical 515, Nuts 1146. The new variety names were indexed alphabetically for each kind of fruit. The year of the listing in the A. P. S. report is

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shown. It has been proposed that the new variety name index be published as a part of the 1944 A. P. S. report and that separates also be printed. There are many ways in which such an index might be useful to fruit breeders, orchardists, nurserymen and to anyone who may wish to name a new seedling fruit. We are still surveying horticultural opinion as to whether this voluminous index would be of sufficient interest and value to warrant the expense of publishing it in the report.

The new variety situation is nationwide. Growers everywhere are testing new varieties. There is a tremendous job ahead in assembling accurate grower experience with new varieties. The A. P. S. through appropriate regional committees proposes to tackle that job and to give the results of that survey suitable publicity.

H. L. Lantz
Secretary

STATE NEWS

(Continued from page 20)

Presidents: East Tennessee, Harry Wallace, Knoxville; Middle Tennessee, Joe Peay, Goodlettsville; West Tennessee, Thomas C. Anderson, Toone; Secretary-Treasurer, G. M. Bentley, Knoxville. The Executive Committee members are: East Tennessee, Alfred A. Swann, Dandridge; Middle Tennessee, Dr. T. A. Patrick, Fayetteville; West Tennessee, Judge T. L. Spraggins, Jackson.

At the annual convention of the Tennessee State Nurserymen's Association, we had a total attendance of 105 and 84 attended the banquet. Officers elected at this meeting were: President, Hoskins Shadow, Tennessee Valley Nursery, Winchester; Vice-President, Joe Howell, Landscape Engineer, Knoxville; Secretary-Treasurer, G. M. Bentley, Knoxville. The Regional Vice-Presidents are: East Tennessee, C. B. Howell, Howell Nurseries, Knoxville; Middle Tennessee, J. R. Boyd, Forest Nursery Co., McMinnville; West Tennessee, Arthur Murray, Arthur Murry Co., Inc., Memphis.—G. M. Bentley, Sec'y-Treas., Knoxville.

PENNSYLVANIA—Braving bad roads and storms, 16 men came from all parts of Pennsylvania to attend the annual fruit growers' short course at the Pennsylvania State College. A. L. Beam, director of agricultural short courses, has reported.

In attendance at the course, which ran all of the second week in February, were: G. Emerson Glauner, West Chester; Paul E. Haverstick, Lancaster; W. Eugene Hoffman, Butler; Roger P. Hurd, Miller-ton; Frank A. Kaiser, Scranton; Benjamin D. Landon and Roy D. Landon, Canton; Ray W. Merrell and William R. Merrell, Williamsport; William H. Moon, Ma-cungie; Jack R. Reitz and Samuel E. Reitz, Brookville; Kent D. Shelhamer, Berwick; John W. Williams, Reading; Anthony Brown Jr., Schwenksville; and J. Ray Daugherty, Murrysburg.



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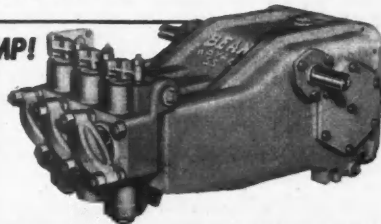
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veterans who wish employment
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any section of the United States.

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LEMOR TREE

JAMES M. Ater, an experimental
fruit grower, living near Chula Vista,
California, is constantly "nosing
around" in his orchard, and doing
"queer things" with his fruit trees.
His most recent innovation is a com-
bination orange and lemon tree.

Ater calls his amazing experiment
a "Lemor tree" and has protected the
brand name in the U.S. Patent Office.
In the not distant future, according to
Ater, it will be unnecessary for lovers
of citrus fruit juices to squeeze both
oranges and lemons into a vessel when
brewing beverages that combine these
two juices. The flavor of the "Lemor"
is a combination of both, and the
flavor is most delightful.

Fruit grower Ater has experi-
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trees, and is now combining his
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fruit of orange, lemon and lime.—
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THE A. I. ROOT CO., Box 24, MEDINA, O.

BLACKBERRIES PROTECT PEACHES

ACCORDING to a recent discovery by Dr. H. W. Allen of the U. S. D. A. Laboratory at Moorestown, New Jersey, wild blackberry plants, growing near peach orchards, protect the peaches. Dr. Allen found that peaches have better protection against the destructive oriental fruit moth when wild blackberries grow near the peach orchard and many strawberry leafroller worms overwinter on the berry bushes.

He found that this leafroller worm provides necessary winter quarters for the young of a small, amber-colored parasite about the size of a mosquito, named *Macrocentrus ancyli-vorus*. This parasite is a deadly destroyer of one of the most destructive peach pests, the worm of the oriental fruit moth. It kills the worm, and this works to the benefit of growers in many of the more important peach producing areas.

Dr. Allen has found that, before they die, the female *Macrocentrus* lay their eggs in large numbers of strawberry leafroller worms, which feed not only on strawberry foliage but also on the foliage of wild blackberries. This occurs in late summer and fall, after worms of the oriental fruit moth become scarce in peach twigs. When an egg hatches, a tiny *Macrocentrus* worm, is produced inside the leafroller worm, which it uses as a winter shelter and a final source of food supply. In late spring, very large numbers of this *Macrocentrus* parasite emerge as full grown wasps. They readily migrate from the wild blackberries to nearby peach trees, there to take up again their summer job of guarding peaches against the oriental fruit moth.

GUIDANCE FOR YOUTH

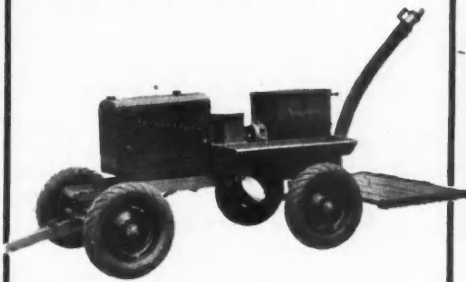
BASED on the major premise that farming is a basic industry, a bulletin on guidance for rural youth, entitled "Matching Men and Farms," has just been issued by the U.S. Office of Education. This new publication is particularly addressed to school counselors.

"Farm youth," says J. C. Wright, Assistant U.S. Commissioner for Vocational Education, in the foreword of the bulletin, "should receive a full and fair understanding of the problems and opportunities associated with farming as a basis for determining whether or not they shall stay on the land . . ."

"Matching Men and Farms" can be obtained from the Superintendent of Documents, Government Printing Office, Washington 25, D.C., for 10c.

AN UNFAILING COMBINATION to assure Bumper Fruit Crops:

1. Niagara Cyclone Fruit Duster . . . equipped with self-starter engine and lights for night dusting. Other combinations available.



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Niagara Fruit Dusters have many inherent features that are not to be found in other dusting machines. Accurately controlled distribution of dust is one of these features. They are strong and durable, yet simple in design. Niagara Fruit Dusters are built to operate under extremely severe conditions and to give many trouble-free years of economical service.

Kolodust is a non-caustic, highly toxic, Bentonite-Sulphur fungicide. Old and tried, it is always at the top in fungicidal value. Niagara dealers will be glad to give you complete details about Niagara Dusters, insecticides and fungicides.

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This new raspberry gets you on to the market earlier and for higher prices. Two weeks earlier than the Latham variety, Sunrise is even more hardy. Introduced by the U.S. Department of Agriculture, the Sunrise Raspberry fruits over a longer season than other types, is of very high quality and extremely disease resistant. For quick profit plant Sunrise.

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Complete discussions of all phases of production and marketing of grapes, strawberries, bramble fruits, currants, gooseberries, blueberries, and cranberries feature this text and reference book. Written in an easily understandable style, the practical grower will find this volume both interesting and useful. 52 Illustrations, 434 Pages. Sent postpaid on receipt of \$3.50.

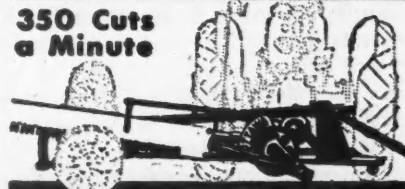
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Grow LUSCIOUS APPLES, Peaches, Pears, Plums, Cherries, Apricots, Nectarines, BERRIES, Grapes, ASPARAGUS in YOUR Victory GARDEN.

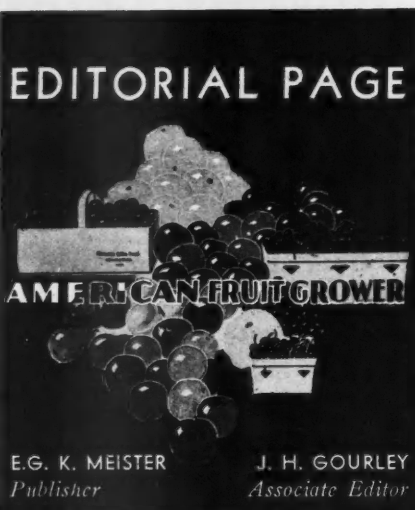
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Free Colored Catalog—Write today

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Box 18, Berlin, Maryland est. 1864





A Big Step In Horticulture

AT LAST the horticulture industries of the United States have organized themselves into one national body, the United States Horticultural Council.

For years the industry has needed just such an organization to voice its rights and opinions in international trade. Horticultural products ranked first in importance among foods exported from the United States in the ten years prior to the war. Thus, it seems that the industry is wise in establishing a mechanism through which members of individual trades and industries and governmental officials can exchange views on foreign trade matters. In post-war years the United States government must continue to recognize its responsibility in matters pertaining to foreign trade. It will have to intervene where necessary in actions taken by foreign governments in respect to import restrictions and controls. A fully organized national horticultural council will do much to facilitate these matters.

Further need for such organization arises from the necessity of deciding on action pertaining to bilateral or multilateral trade agreements. Finally, the United States Government will have domestic programs with respect to some commodities which must of necessity take into consideration foreign trade aspects.

Other international trade problems will confront the horticultural industry at the close of the war. In view of these facts, we feel that the horticultural industry of the nation has taken a very progressive step in organizing the United States Horticultural Council.

Home Fruit Canning

THE VICTORY GARDEN program for 1945 is placing increased emphasis upon home canning of fruits, and the program calls for increased plantings of home fruit gardens. Of all the canned fruits that

were available for civilian consumption in 1944, three-fourths of them were those canned in the home, the other one-fourth coming from commercial canneries. This, of course, does not include that used by the armed forces. The government has estimated that there were 1,427,770,000 quarts of fruits canned in American homes last year. The total amount of home-canned fruits and vegetables for 1944 was estimated at 3,409,020,000 quarts.

Since the National Victory Garden program for 1945 calls for increased home canning, particularly of fruits, it is wise that we give careful thought to our supplies. Since the shortage of labor and other limiting factors in the nurseries of the nation has reduced somewhat the quantity of fruit plants available, we question whether home plantings can be increased much over last year. Yet there is a definite need for home canning.

Order Containers Now

GROWERS AND SHIPPERS of fresh fruits are warned by the War Food Administration that they again will have to take special measures to assure themselves of adequate container supplies, if production of fruit is as large as expected this year. Normal production of fruits for the fresh market would put a heavy load on container requirements, and a larger than normal production would increase the load proportionately.

At present, the supply of lumber is considerably below the demand for it. Labor problems are not expected to be any less severe than in 1944, and equipment used in the industry such as trucks, tires and tractors for logging operations is a year older, and few new replacements can be provided.

To make certain of an adequate supply of containers for handling the expected production of fresh fruits, it is recommended that wartime adjustments used in packaging crops during the past two years be continued. These include: (1) Placing orders for containers by shippers and growers as far as possible in advance of need and taking delivery at any time the containers are available. (2) Salvaging containers and re-using them to the utmost.

The Grower and the War

CAUTION! That is the advice to fruit growers planning increased land investments. For the most part farms that are being bought today cannot be paid for if farm products return to the 20-year average, and fruit farms are no exception.

Some signs are appearing on the horizon that indicate a land boom is in the making. Farm land prices are

going up, cash payments are declining, mortgages are increasing and resales of farms are becoming frequent.

Add to this the fact that last year farmers received more money from the sale of their products than ever before in history. Then suppose the war should end soon and this large purchasing power now being held in reserve is suddenly released. If there are no curbs on prices, then we are in for an era of speculation that will put in miniature the one in 1919-20. The after-effects of such a land boom and inflation can be realized if we only stop and think of the devastating aftermath following the speculation period after the other war.

Fruit growers should beware of the occasional land speculator who frequently uses not too honest means to effect an increase in land prices. Extra money should be placed in savings, war bonds, or non-speculative investments of a safe nature. A safe course at present seems to be to postpone large purchases at wartime prices and wait until peacetime conditions when future income and price levels can be more accurately judged.

Foreign Horticulture

FROM THE BALTIC STATES to the Balkans the winters of 1939-40 and 1941-42 were extremely hard on fruit trees. Germany alone is estimated to have lost some 60 million trees, which is more than one-third of her original tree population. The Scandinavian countries also experienced heavy loss of trees. One of the primary causes of such heavy loss was neglect. It stands to reason that due to the pressure of war and its hardships, fruit plantings would be left unpruned, unsprayed, unfertilized and ill-cared for. The results have been devastating to the fruit industry of the European continent.

Even with the best of planting and growing conditions, it will require years of extensive planting to bring European fruit production back to prewar levels. In the meantime, heavy demands may be made upon the fruits and fruit products of this country. Surely this will be of advantage in helping us to regain our export trade in this field. But, we must not feel that this is to become an inexhaustible outlet for our surplus fruits.

The point to keep in mind is that for a while after the close of hostilities, Europe will be a potential market for fruits and fruit products of this nation. Whether the nations of the continent become real markets for our products will depend upon the assistance they get from this government and other governments, from their real purchasing power and from the strength of their credit.

Fights Corrosion...SO Water Fog can Fight Fire

Fog outside a ship is dangerous. Fog on or below decks—Water Fog—can save it from the worst peril of the sea—fire!

Water fog is man-made... sea water forced through a nozzle with screen holes so fine they make a vapor-blanket that smothers even raging oil and gasoline flames. And, equally important, water fog does not capsize ships with needless tons of water.

The screen for the nozzle that makes water fog must stand off the corrosive bite of salt water, yet stand up to terrific pressure despite its thin construction. Therefore, it is made of Monel which contains a high percentage of Nickel—the tough metal which is used in alloys that fight rust and corrosion.

Already Nickel has helped water fog snatch blazing warships, carriers, troop transports, and even tankers, from Davy Jones' relentless grip—sometimes after burning for days!

*...just as it Fights Corrosion
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If fire strikes in your home or garage, your fire extinguisher must be ready—not clogged or frozen by rust or corrosion.

That's why many types have valve seats, discs and springs made of Nickel alloys—metals that stand up in "standby" service as well as in every-day use. In this, as in countless other ways, versatile Nickel is your "unseen friend"—part of your daily life, like the starch in your shirts or the salt in your food.

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